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THE WOR… MOTIVE AUTHORITY

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FLAT-OUT FASTEST AMERICAN CARS II The Sequel

JUNE 1989

SPECIAL BONUS!
High-Speed Heat!
FASTEST POLICE CARS IN AMERICA

[redacted]

The meticulously sculpted lines of the Galant GS: one can fully appreciate their beauty, only when one appreciates their intelligence. The Galant's aerodynamic shape lowers its resistance to the wind, which raises its level of cabin quiet, ride smoothness, and efficiency.

Because the writers not only measure cars. They love cars.

And, as is true to the automotive relationship as to any relationship, they want a car that loves its driver equally.

In 1989, the Mitsubishi Galant GS is their car.

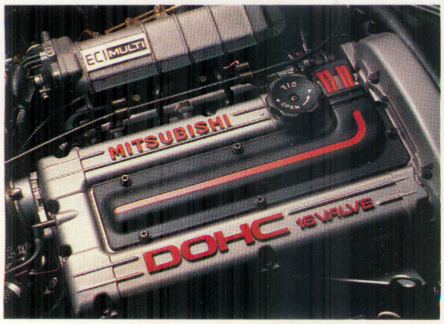
For the sum of all their statistical measures.

And the more subjective measure of their automotive appreciation.

And all of what follows is, quite simply, why.

Strength in numbers.

Beneath the hood of the Galant



A 4 cylinder, 2.0 liter 16-valve DOHC engine: the heart and soul of the new Galant GS.

GS is a 16-valve, double overhead cam, 135 horsepower engine.

16 valves. Four valves per cylinder, instead of the conventional two.

The advantage?

Any marathon runner can answer that.

Ask him if he'd like nearly twice the oxygen for a race.

Of course he would. It would give him nearly twice the energy, and make his run that much easier.

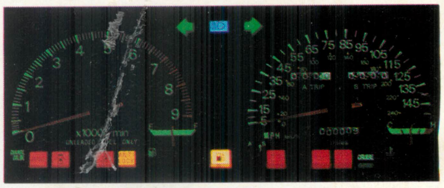
But how to operate those sixteen valves?

One technological accomplishment was cousin to another: *double overhead cams.* Working in tandem, alongside one another, a cooperative of efficiency.

Four valves per cylinder, in sum, let the Galant GS take a deep breath.

As we advise any driver to do, when stepping on its accelerator.

Added to all this under-the-hood thinking is a final thoughtful touch. Patented Dual Engine Stabilizers,™ in counter-rotation with the crankshaft, neutralize engine vibration for both a smoother and a quieter ride. Our engine does its work not brashly, but with quiet confidence. And at 135 hp, with considerably more power than similar-sized normally aspirated 4-cylinder engines. (Our standard and Galant LS models offer a slightly less powerful and no less refined single overhead cam engine.)



Not an instrument panel, but an information center. White on black in daytime. Green or orange illumination at night.

Welcome to the controls of the Galant. Where knowledge is power.

In an automobile, control is not only a function of driving safety. It is equally a function of driving pleasure. It liberates you to enjoy the trip, leaves you relaxed and unstressed.

In the Galant, every ergonomic detail is in strict service of such control. Every function is at your immediate command, such as

"...a vigor, style, and level of world class technology that advances the benchmark, import or domestic."

Motor Trend Magazine

When the writers of *Motor Trend* road-test a car, it's no Sunday drive.

They inspect. They measure. They time. They peek. They poke. They peer. They examine. They scrutinize.

They take it through every test and apply every measurement that seems at all reasonable. And enthusiastically devise some that are a bit beyond reason.

They simulate average driving conditions. And conditions the average driver would never encounter.

They put it through its paces.

Then put it through *their* paces.

Against such scrutiny, many cars are found wanting. Some manage to earn the writers' approval.

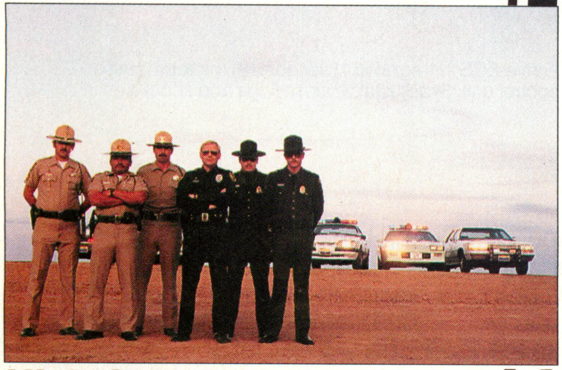
A few even earn their enthusiasm.

And one import car, each year, wins the highest praise the writers can confer.

The title of Motor Trend Import Car of the Year.

There is, importantly, another form of measure that the writers call upon. It relies not on graphs, or numbers, or test results, but rather on the writers' many years' automotive experience. It looks beyond their calipers and stopwatches and data to ask: how is this car to drive? What kind of feeling do you get behind the wheel? What kind of satisfaction?

Flat-Out Fast **42**



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MOTOR TREND

JUNE 1989
VOL. 41, NO. 6

THE WORLD'S AUTOMOTIVE AUTHORITY

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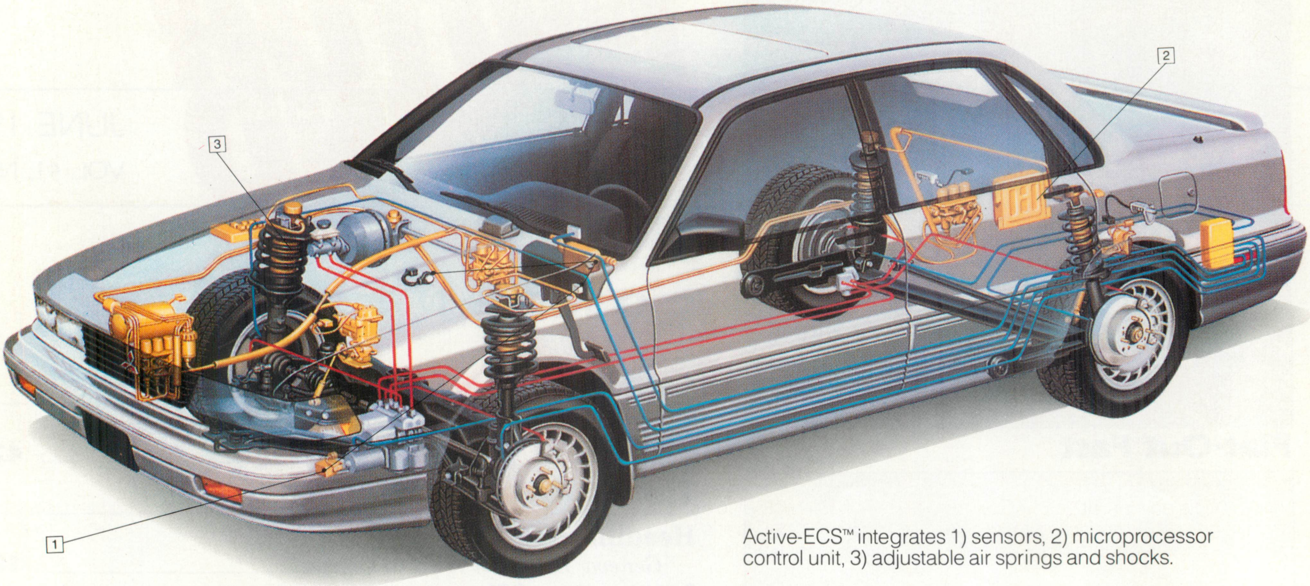


Active-ECS™ integrates 1) sensors, 2) microprocessor control unit, 3) adjustable air springs and shocks.

headlamp, flash-to-pass, and wiper/washer, arranged on twin stalks on the steering column. You are kept fully apprised of all vital data of the vehicle surrounding you. Even brake fluid level. Battery charge. Door or trunk ajar. The primary gauges not only have saucer-sized, easily-read analog faces, but on the GS, they can be lit in your choice of green or orange at night.

One might expect, for all this information, to find a cacophony of bells and whistles. One will discover instead a symphony of control.

The Active ECS™ Suspension: Mitsubishi heralds a new balance of power.

Handling and stability, road feel and control take a quantum leap: introducing Mitsubishi's Electronically Controlled Suspension (Active ECS).

Sensors constantly monitor six functions, from vehicle speed to steering-wheel turning rate to car height to lateral G-force (1, in diagram above) and feed their data to a microprocessor (2), which instantly adjusts shock-damping and air-spring rates (3) at each wheel.

The result is unprecedented and astonishing. Significantly and noticeably less leaning on curves. A ride that stays level and unruffled, in the face of the most ruffling road or driver. The Galant GS practices perfect posture, in conditions that are anything but.

But such a suspension does much more:

It adjusts with a console switch to Soft, Sport, or Auto, letting you select a more supple ride, or a firm ride with maximum road feel, or, in automatic, constantly matching overall suspension stiffness to road conditions and the speed of the car.

The suspension can adjust for bumps by actually lifting the car body nearly two inches higher at speeds under 6 mph.

It adjusts the aerodynamics of the car at highway speed, by lowering the hoodline 0.8 inches.

It adjusts the headlamp cast by lowering the rear of the car when the headlamps are switched on.

It may call for some adjustment in your automotive thinking.

The Thinking Machine.

As man's machinery becomes ever more subtle, more capable, more responsive, at some point the machine must be said to actually

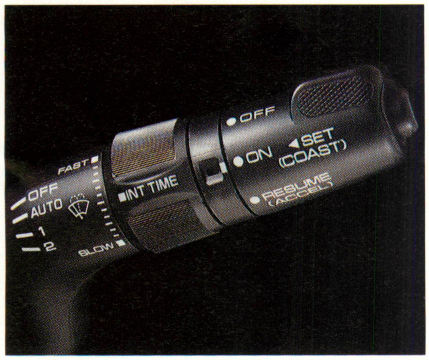
All data constantly available; all functions instantly accessible; the goal is ergonomic precision the result is driving pleasure.

A relaxed driver is an alert driver: an irony and truism of automotive science, that the Galant's interior exemplifies and amplifies. The driver's controls are accessible, legible, and comprehensive. A seat with "grippy" fabric and firm side bolsters supports him. Passengers share with him firm seating, generous head and leg room, and the sense of well-being that comes of a panoramic view.

think. In many regards—from its active suspension, to optional anti-lock braking, to console controls, the 1989 Galant GS, like few other current production cars, does indeed "think." The latest achievements in artificial intelligence aren't confined to the lab. They are available on the road.

Consider the steering. EPS-II™, a patented Electronic Steering System, provides variable power assist, not merely responsive to speed, as in other cars, but also to the *degree* of assist you desire, by your choosing either NORMAL or SPORT on a console switch.

Consider the automatic transmission available in the Galant LS and standard models. It provides a



Multiple functions; fingertip control.

choice of shift points with a switch marked POWER or ECONOMY, for either more responsive, or gasoline-conscious, automatic shifting.

Consider the list of standard features in the Galant. Unstandard indeed. It includes power-assist front disc and rear drum brakes (four-wheel discs on the Galant GS), tinted glass, composite quad halogen headlamps, automatic-off headlamp system, keyless door locking, multi-adjustable driver's and passengers' seats, and dozens more. Power windows, door locks, and mirrors, as well as cruise control, come standard on the LS and GS.

The advantages of kinship with renowned Mitsubishi Electric result in a state of the art AM/FM stereo radio and cassette deck, compellingly experienced through six speakers. Standard on LS and GS.

The list of its standard features, the graceful incorporation of its breakthrough technology, the polish of its fit and finish, taken together, point up the Galant's final appeal: its price. The Galant is priced from $10,971 for the standard model, $13,579 for the LS, and $15,269 for the GS.*

Eminently reasonable. If not outright astonishing.

All three come with a 36-month/36,000-mile bumper-to-bumper limited warranty, and a 7-year/100,000-mile anti-corrosion perforation limited warranty. For the many miles in front of them, Mitsubishi Motors remains behind them.

Japan's "Car of the Year" in 1988, making its mark on America in 1989.

When the Galant garnered Japan's most prestigious automotive award, the writers of *Motor Trend* were intrigued. But it would take more than previous honors or the say-so of others' to convince them.

The writers have their own standards.

And they can be notoriously demanding in their evaluation of an automobile.

But when they find an automaker who seems to have been just as demanding in conceiving, designing, and building one, the writers are eager for the world to know. In no uncertain terms.

When a car delivers, so do they.

The Mitsubishi Galant. Motor Trend's choice for Import Car of the Year.

MITSUBISHI GALANT

SUDDENLY, THE OBVIOUS CHOICE.™

MITSUBISHI MOTORS

*Mfr.'s Sugg. Retail Price. Actual price set by dlrs. Tax, lic., freight, dlr. options and charges extra.

When the writers of Motor Trend took it out, it was an intriguing new import.

When they brought it back, it was Motor Trend Import Car of the Year.

The 1989 Mitsubishi Galant.

Six Appeal.

The next time you make eye contact with a six-pack of Cold-Filtered™ Miller Genuine Draft Longnecks, go ahead and pick one up. You won't be disappointed!

Cold-Filtered™ Miller Genuine Draft.

© 1989 Miller Brewing Co., Milwaukee, WI

Mike Anson/**STARTING GRID**

Extra-Credit Assignment

It seemed like an innocent request. Our high school auto shop instructor asked a group of us car crazies if we wanted to earn some extra money and extra school credit at the same time. The $3.50 per hour he offered sure beat slinging burgers at the Wich Stand for $1.25, so we accepted.

We were to show up ready to work at the auto shop on Tuesday and Thursday nights from 6:30 to 10. Our teacher explained that the school district, in an effort to save money, wanted us to refurbish its cars. We were to examine the cars, do small repairs like replacing water pumps, carburetors, and such, and then repaint each car.

"How you'd like to enter the high-paying world of auto repossession?"

"The school district is willing to pay a fair rate for the work, but it will still be cheaper than buying 50 new cars," he explained. "Keep this whole thing quiet because I can only have you four guys working on the cars. I can't have the others in the class hanging around."

The first two cars were clearly school-district types: forest green Ramblers with 3-speed manual transmissions and blackwall tires. We tuned them up and repainted them the industrial green color. (We had considered competition orange since it was popular at the time, but decided against it, because we would just have to repaint them again. It would've been funny but not worth the extra effort.) Thus refurbished, they were sent on their way.

The next two cars didn't seem like school-district cars to us, a new Buick and a new Ford Galaxie. Each had fewer than 6000 miles and was as good as new.

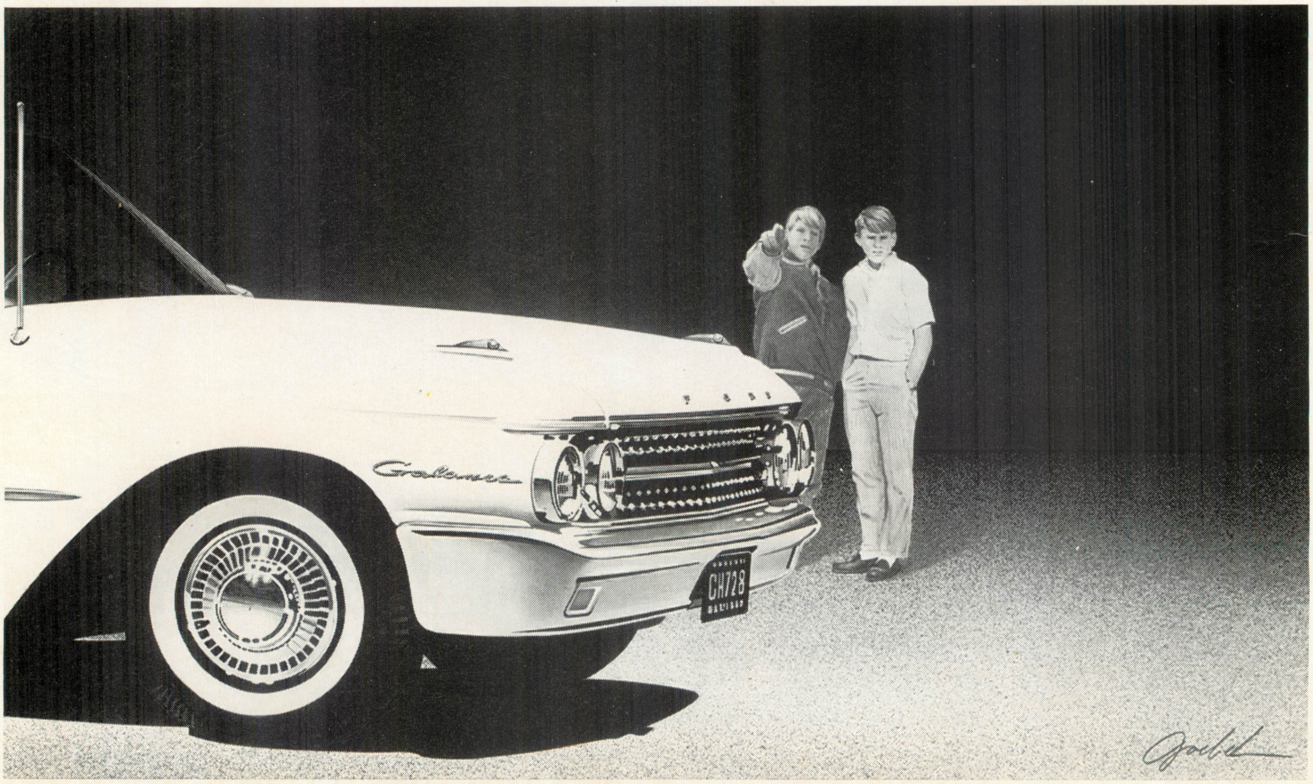
"They belong to school board members. It's one of their perks," our instructor explained. We didn't know what a perk was, so we didn't question that. But when he wanted them repainted a different color ("including the doorjambs and under the hood and decklid, boys"), we got worried. Was our teacher running some kind of scam using the school facilities (not to mention the captive but paid labor) to refurbish cars and make a few extra bucks? Or were these actually stolen cars? Hot cars with our fingerprints all over them? In some cases, our fingerprints were embedded into the paint. We were okay painters but a little careless reinstalling the trim before the paint had fully dried.

While we were deciding just how to get ourselves out of such a mess, we accidentally found out how he was getting the cars. The shop teacher at a neighboring school had his class in action, too.

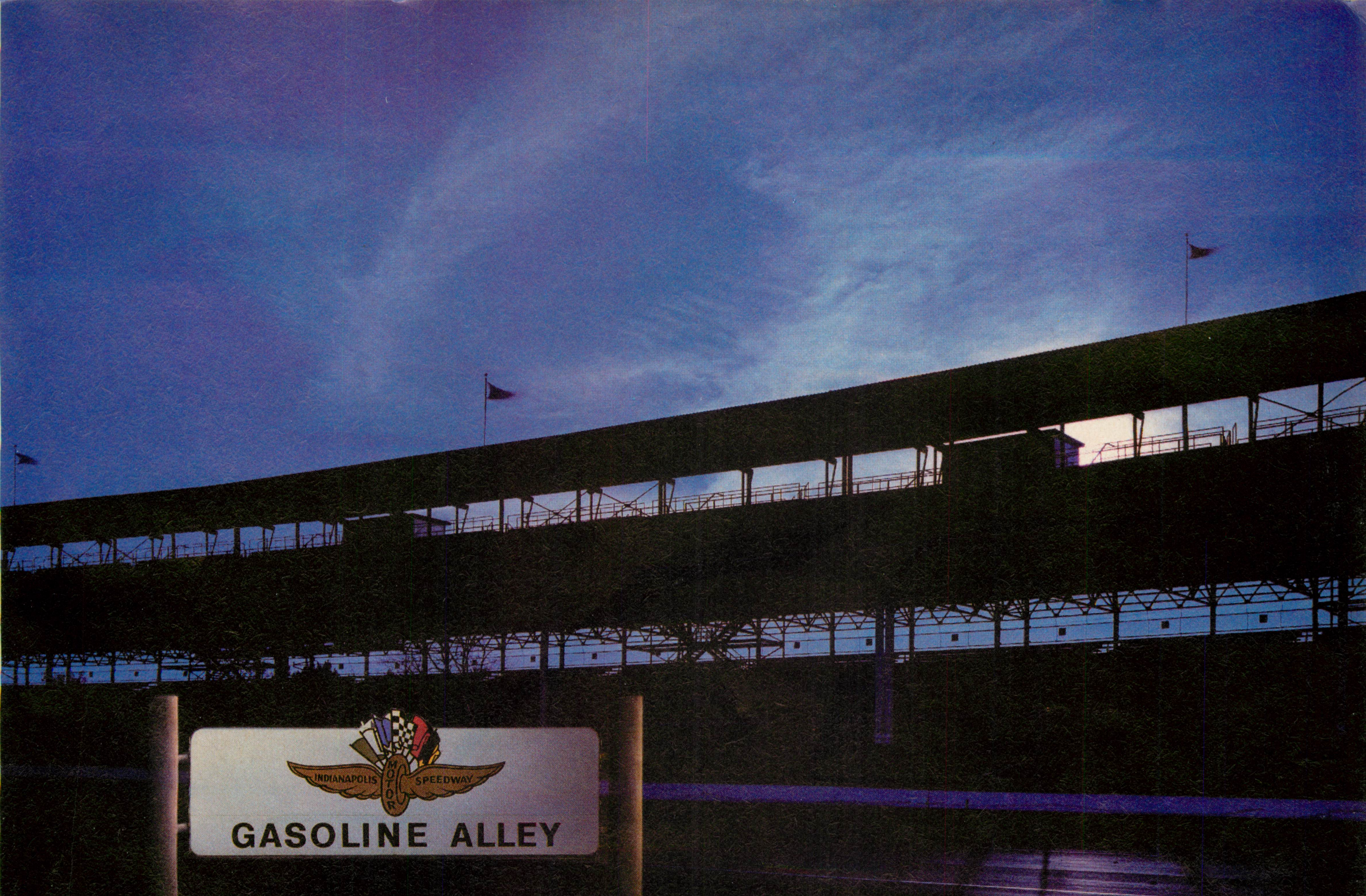
"I'm going to teach you boys a trade," their teacher announced one night. "How'd you like to enter the high-paying world of auto repossession?" Not enough of them could stay out late enough to enter the high-paying world of auto repossession, so a "car guy" from the other school called us to see if we were interested in learning about slim jims, master keys, bootleg turns, and bulletproof vests.

"It's real exciting and kinda fun, but I can't stay out until 2 a.m. on a school night. Are any of you guys interested?"

The phone call to the cops was anonymous, but it worked. The high school auto shop theft ring turned out to be quite large and involved many teachers and several high schools when it was all uncovered. The villains went to prison where they probably teach auto shop to this day. But every time I accidentally lock my keys in the car, I wish I had joined long enough to learn how to use a slim jim. **MT**



JOE GOEBEL



It's not just a truck anymore. It's the Official Truck of Gasoline Alley.®

Behind the glitz and glitter, the speed and beauty that is the Indianapolis 500, a powerful force is at work making sure it comes off without a hitch.

For the 11th time in the last 16 years, GMC Truck is the Official Truck, the behind-the-scenes workhorse, of the Indy 500.

It's a job for which GMC Truck is well suited. The Sierra's 4.3-liter electronically fuel-injected V-6 is the most powerful standard engine in a full-size pickup. It has power steering and the anti-lock rear brake system (operates in two-wheel drive only). Plus, the muscle to *move* up to 19,000 pounds, including vehicle, passengers, trailer, cargo and equipment, when properly equipped.

For 1989, GMC Truck has made available a special street version of the "500" Sierra Pickup.

It has Indy decals. Alloy wheels. And more.

The "500" Sierra is more than a truck. It's the whole spirit of Indy. And you can drive it now at your GMC Truck dealer.

For the name of your nearest dealer, call 1-800-VALUE89 (1-800-825-8389).

GMC TRUCK

It's not just a truck anymore.™

Let's get it together . . . buckle up.
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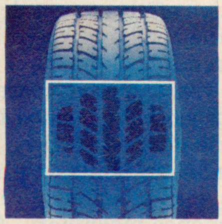
OFFICIAL PACE CAR
73RD INDIANAPOLIS 500 · MAY 28, 1989
EAGLE ZR50
GOODYEAR
EAGLE ZR50
GOODYEAR

Only one race is run at the Indianapolis Motor Speedway. And that race is run on just one make of tires.

ONLY ON EAGLES.



A Goodyear Eagle "contact patch." Where an Eagle demonstrates its superiority.

For the past seventeen years, every race at the world famous "Brickyard" has been won by cars racing on tires designed, engineered and made by Goodyear.

This year's Indianapolis 500 will be no different.

All 33 cars, including the Penske PC-18 of 1988 winner Rick Mears, will be on Goodyear Eagle racing radials.

And the car that will lead the field to the line, the Pontiac 20th Anniversary Trans Am Pace Car, will also be on Goodyear Eagles.

But in this case, they will be Goodyear Eagle high-performance street radials. The best-selling line of performance tires in the world.

Much of the success of Goodyear Eagle street radials comes from Goodyear's unequalled worldwide racing success.

And the knowledge we gain on the track, we apply to our high-performance street radials.

So it's no wonder that Goodyear Eagles are chosen by more car makers for their top-of-the-line performance cars than any other make of tires.

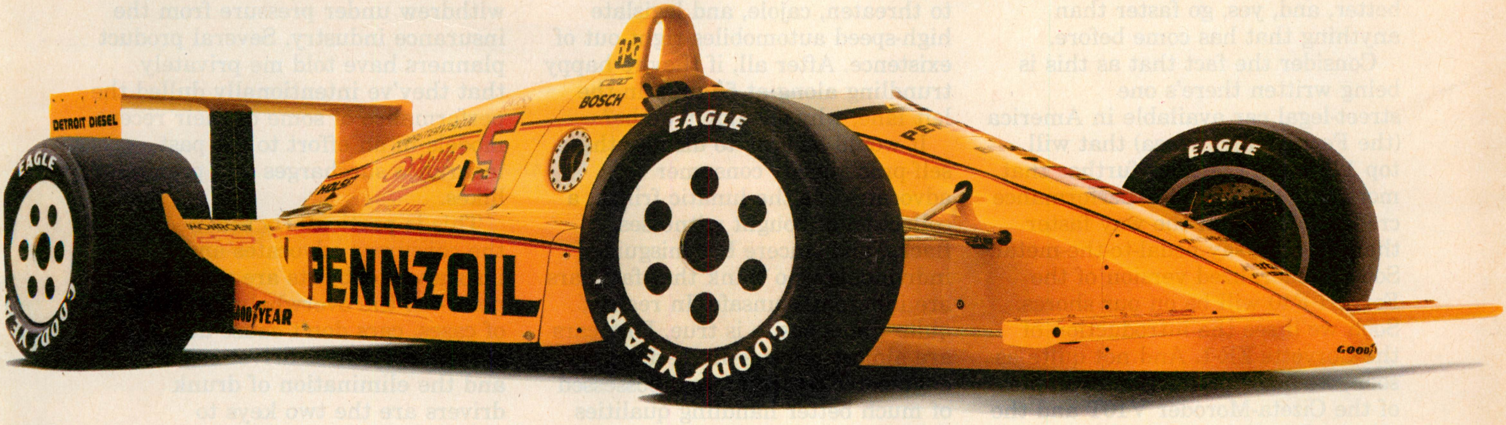
Because as these car makers know, there really is a difference in performance tires.

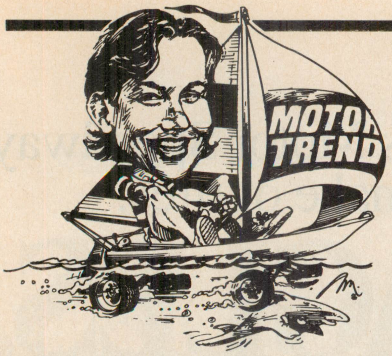
It is a difference that shows itself in the most critical area of all: the "contact patches" of your tires, where your car ultimately meets, grips and responds to the road.

And that difference is a major reason why all of the cars at this year's Indianapolis 500 will run on just one make of tires: Goodyear Eagles.

GOODYEAR

BECAUSE THERE REALLY IS A DIFFERENCE.





Jack R. Nerad/**ROADSIDE**

The Siren Song of Speed

The last hundred years has been a century obsessed with speed. Technology has been on the fast track these past 10 decades, zooming forward from steam locomotives to automobiles to airplanes to rocketships aimed at the moon. The pace of all this progress has been breakneck, the speeds attained nothing short of staggering.

Narrowing the focus to our favorite means of transportation, the automobile, the quest for speed in the last century has been like the quest for the Grail. From Barney Oldfield on the beach at Daytona to Mickey Thompson on the salt at Bonneville to our own Ron Grable on the banked track at the Arizona Test Center, the goal has always been the same: "How fast will she go?"

Right now we're living in a new Golden Age of Performance. I'm a fan of the '60s muscle-cars, but I can tell you from the driver's seat that performance cars have never been better than they are today. From all corners of the world, in all price ranges, with two doors, four doors, or no doors at all, performance is king. Today's cars handle better, accelerate better, stop better, and, yes, go faster than anything that has come before.

Consider the fact that as this is being written there's one street-legal car available in America (the Ferrari Testarossa) that will top 175 mph. Consider further that more cars with similar performance credentials are on the way faster than you can say pedal-to-the-metal. Soon a federalized version of the Ferrari F40 will be on our shores. Soon we'll see the introduction of the Corvette ZR-1. And not quite as soon, we'll see production examples of the Cizeta-Moroder V16T and the all-new Lamborghini Countach.

In Europe, the speed obsession runs even deeper. Right now a few lucky (and extremely wealthy) souls are taking to the streets in cars that nudge the 200-mph barrier, namely the Porsche 959 and F40, with the Aston Martin Zagato not far behind.

As pricetags dip into the affordable range, there's no shortage of speed either. Our most recent top-speed test included some incredible velocity-per-dollar ratios. Most notable among these budget-burners were the Pontiac 20th-Anniversary Trans Am ($25,000/162 mph), Ford Taurus SHO ($23,000/141 mph), and Shelby CSX ($15,000/148 mph). Clearly, speed is not just a province of the very rich.

While those of us who are car enthusiasts can currently revel in an embarrassment of riches, forces are at work that could put an end to this second Golden Age. There are people in this world who simply cannot comprehend a love of high-speed automobiles. These dullards look at their own cars as mere transportation appliances, the means of getting from their drab homes to their dreary places of employment and back again. You find most of these gray individuals working for such benevolent enterprises as insurance companies and government lobbying groups. You'll see them swarming the halls of Congress, crowding the anterooms of state legislatures, and orchestrating media events to get their cockeyed stories on the local news. With money to be made at the expense of our individual freedom of choice, they'd be happy to threaten, cajole, and legislate high-speed automobiles right out of existence. After all, if they're happy trundling along at 55 mph in the left lane, why shouldn't we be?

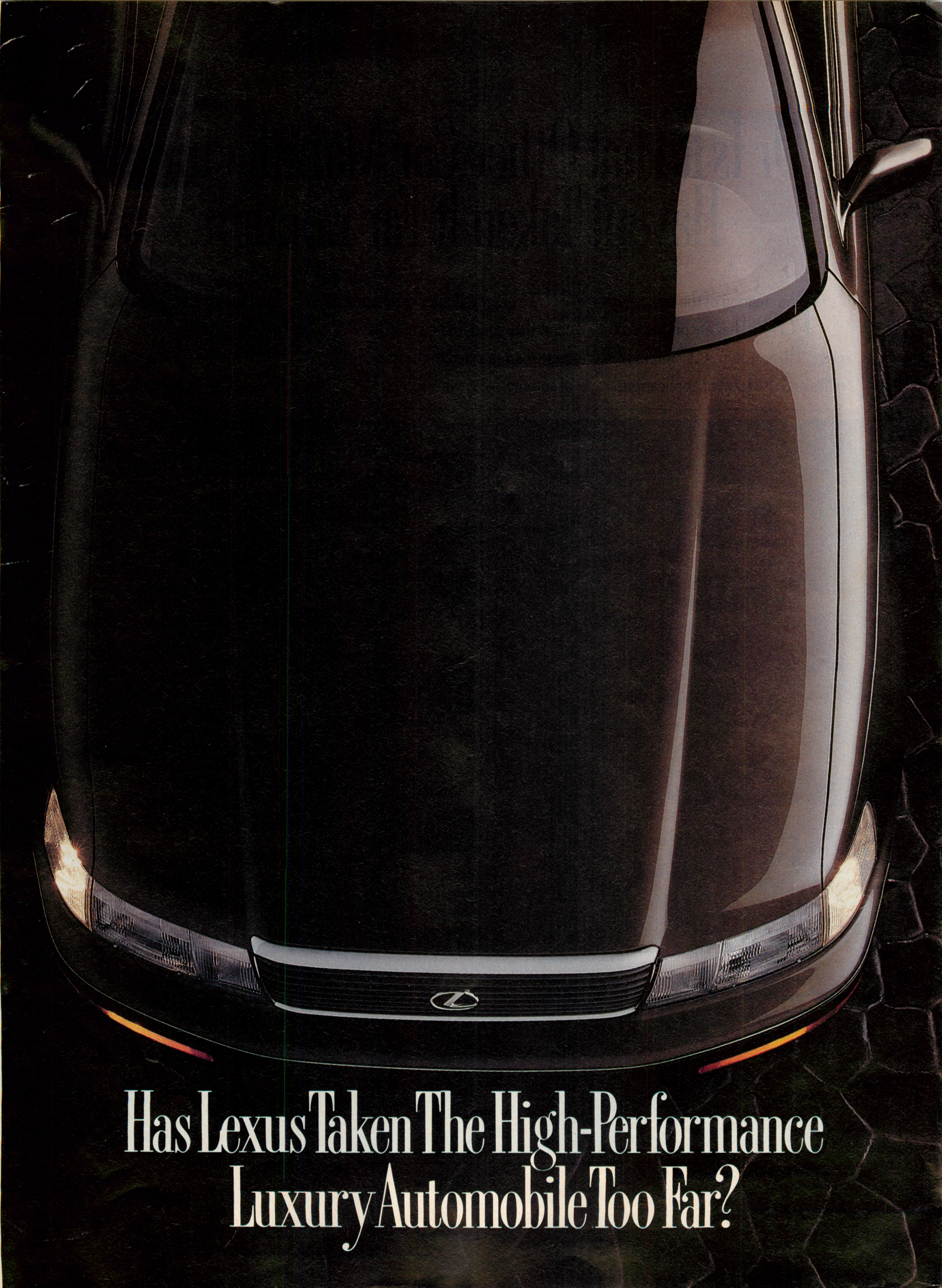
It would be easy to dismiss these self-proclaimed "consumer advocates" as the lunatic fringe, a collection of bought witnesses, flacks, and sincere but misguided individuals who think that fast cars are inherently unsafe. In reality, quite the opposite is true. Fast cars are almost universally better engineered, sturdier, and possessed of much better handling qualities than the typical automotive appliance. Further, the interstates and other divided highways where speeds are highest have been proven repeatedly to be the safest roads in the nation. The simple fact is most accidents happen on low-speed roads in cities and towns and are much more likely to be the result of a failure to yield right of way, improper turns, or incorrect lane usage than of speed. Alcohol, of course, figures in a glaringly large percentage of fatal automobile accidents, yet speed and, more specifically, high-speed cars get bad publicity in the general media for their alleged poor safety record, while effective efforts to get drunk drivers off the road and keep them off have taken a back burner.

In recent years, manufacturers here and abroad have bucked this mass hysteria created by the insurance industry shills and have provided us with a candy store of high-performance machinery. And the public has responded by purchasing record numbers of performance cars of all persuasions. How can the self-appointed advocates claim they represent the consumer when they have the avowed intention to ban the very vehicles millions of consumers are buying?

Sadly, however, some manufacturers are again beginning to be affected by this artificially engineered lobbying effort against performance cars. Citing the legislative climate, Ford Motor Company declined to participate in our most recent top-speed test. (We borrowed Ford products from a private owner and tested them anyway.) In a previous test, Mazda withdrew under pressure from the insurance industry. Several product planners have told me privately that they've intentionally dulled the performance of some of their recent models in an effort to get past insurance surcharges and premium hikes.

This is particularly sad, because the consumer advocates and insurance lobbyists are missing the point—in the overwhelming majority of cases, cars don't cause accidents; drivers do. Better driver *training* and the elimination of drunk drivers are the two keys to improved safety records on the highway, not a de facto ban on performance cars. I don't care what the insurance industry stooges drive. If they want slow, sluggardly appliance vehicles, that's fine by me. I just don't want them to tell us what we should drive. The battle's being joined again. We can't let it happen. **MT**

Forces are at work that could put an end to this Golden Age of Performance


Has Lexus Taken The High-Performance
Luxury Automobile Too Far?

Or Is It That Other Car Manufacturers Haven't Taken It Far Enough?

The creation of the new Lexus LS400 has encompassed 6 years, 450 prototypes, 2.7 million test miles and 300 patent applications.

An unprecedented development effort that you'd think would have more than satisfied the most critical of automotive engineers.

But not Lexus engineers. No, they had to take it that little bit further.

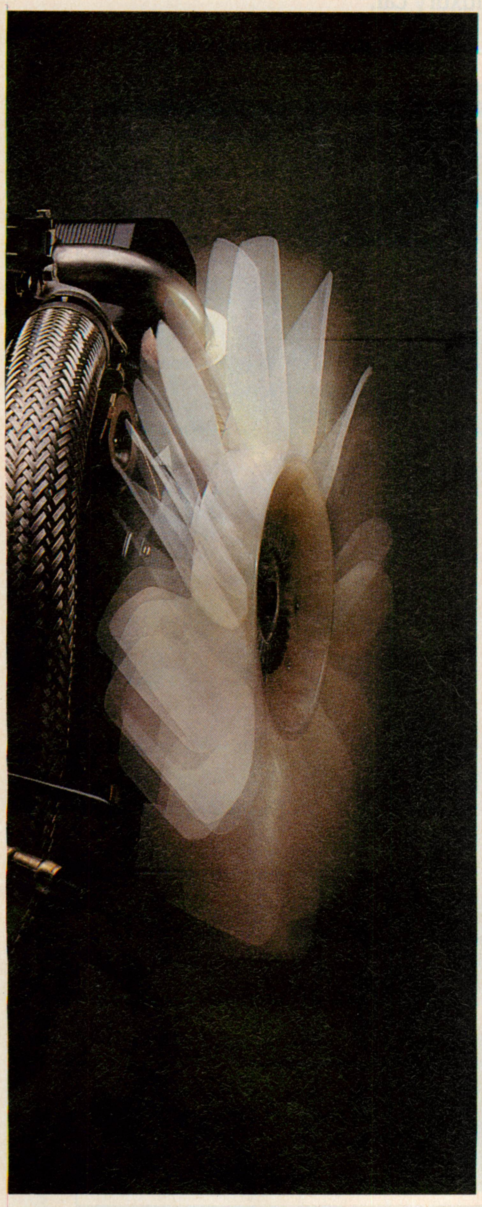
Witness the picture below.

It's the LS400 engine, and our

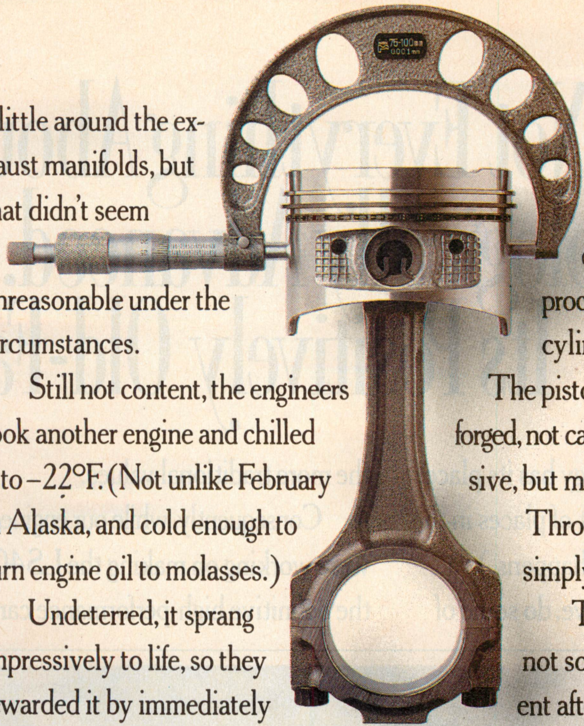
engineers put one on a test bench and ran it under load non-stop at full power: the equivalent of more than 150 MPH.

According to our calculations, it was like running it non-stop around the world at the speed of a race car.

The engine reacted extremely well to this ordeal. Sure, it glowed



a little around the exhaust manifolds, but that didn't seem



unreasonable under the circumstances.

Still not content, the engineers took another engine and chilled it to −22°F. (Not unlike February in Alaska, and cold enough to turn engine oil to molasses.)

Undeterred, it sprang impressively to life, so they rewarded it by immediately pushing it to redline under full load (starting it in the dead of winter and racing it up a mountain would arguably have been kinder).

Such treatment went on 24 hours a day for over a week, and this engine reacted more or less the same as the other one did to the round-the-world test, except that, understandably, it didn't glow.

There were numerous other tests to which the LS400 engine was subjected, but we'll spare you.

Our point is simply this: when we call it reliable, we certainly don't use the term lightly.

Nor, for that matter, do we use the term durable lightly.

Every single material traditionally used in engines was questioned.

The engine block ended up being made from high-silicone aluminum alloy, rather than cast iron. That meant optimum lightness and heat dissipation, but it also meant the complex and expensive process of adding cast-iron cylinder liners.

The pistons are aluminum, but forged, not cast. Much more expensive, but much, much stronger.

Throughout, our aim was simply this:

To create a car that did not sound or feel any different after 50,000 miles than it did when it was new.

But while reliability and durability are comforting attributes to have, they're hardly exhilarating.

The Lexus, on the other hand, is.

Its four-cam, 32-valve, 250 HP V8 engine can take the LS400 from 0-60 in just 7.9 seconds.*

(Though, at the risk of being unexhilarating again, it's projected to be one of the first high-performance luxury cars efficient enough to avoid the gas-guzzler tax.)

And its track-tested top speed of 150 MPH* makes it one of the fastest sedans in North America.

Why did Lexus engineers insist on going to these extremes?

Simple. They figured that if the LS400 could survive this kind of torture, it would not merely cope with normal driving conditions.

It would positively excel.

*Estimated performance figures based on manufacturer's prototype test and are for comparison only.

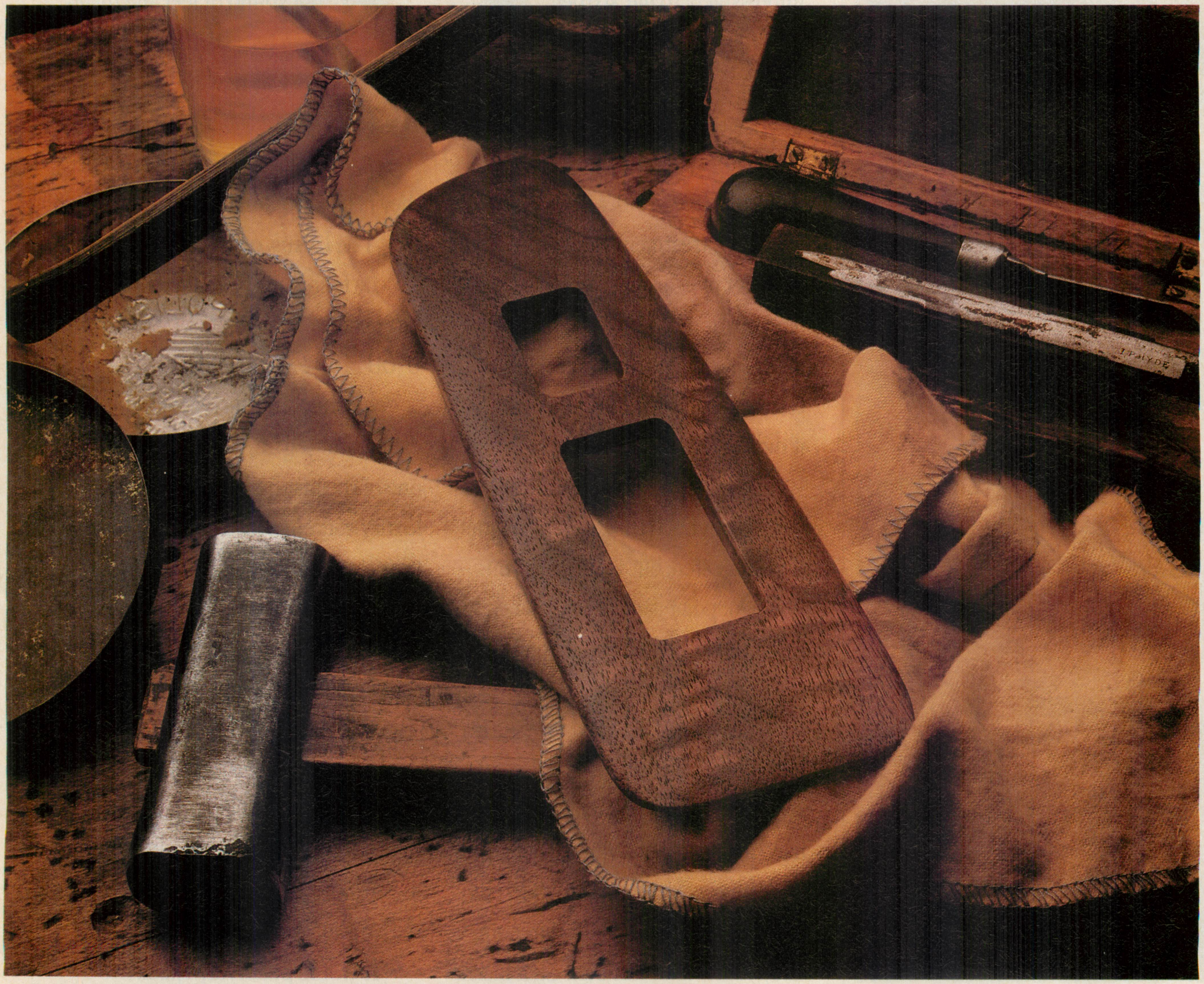
Not Everything About Lexus Is Technologically Advanced. In Some Ways It's Positively Old-Fashioned.

High technology has its place. (Rather a lot of places in the Lexus LS400, as it happens.)

But so, we believe, do some of the more traditional values.

Consequently, while our engineers were working on making the LS400 the definitive high-performance car, another team was working just as fervently on making it the definitive luxury car.

The piece of wood below is a



Lexus. The luxury division of Toyota. © 1989 Toyota Motor Sales USA, Inc. Lexus reminds you to wear seat belts and obey all speed laws.

small but perfect example.

It took our interior designers two years to come up with it.

Only after scrutinizing 24 different woods and analyzing them exhaustively for just the right color, just the right grain, just the right character and just the right feel, did they eventually select the one you see.

Walnut. But not just any walnut, California walnut.

And they dictated that every single piece in a particular car should come, not just from the same tree, but from the same part of that tree.

(It's interesting, though possibly not all that surprising, that this wood finally came from a maker of fine grand pianos.)

Nor did the choice of leather come any easier.

Our designers became experts in tanning methods, dyes, grains, textures and stitching.

They examined hides from all over Europe, Japan and the U.S.

Hides that looked right somehow didn't feel right. And hides that felt right tended to stretch, or wear poorly.

And many more hides were rejected because their dyes didn't stand up to our light-fade test.

(Admittedly this was partly due to the designers far exceeding the accepted world-wide standard of 200 hours of exposure.)

Coincidentally, like the wood selection, the whole process took two years. And coincidentally, also, the final choice came from America.

This near-obsessiveness stretched to every part of the Lexus interior.

The designers demanded that the colors and textures of adjoining or related components matched or at least harmonized perfectly.

So where lesser cars might use many manufacturing processes, each with its own finish characteristics, Lexus used just two.

And where lesser cars might use several molded components, Lexus used just one.

Each part was rigorously tested before being approved for installation.

And even after installation, the designers didn't let up.

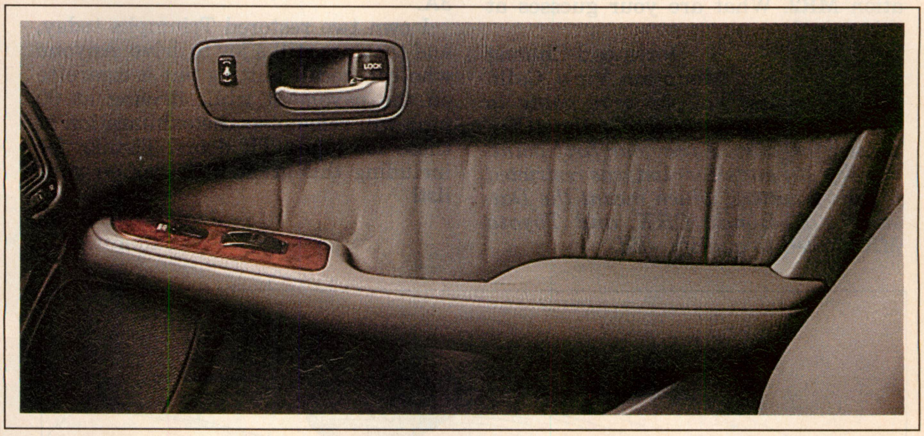
What about years down the road, they worried, will they still match?

(You've only to look at most cars over a couple of years old to see the effects of wide temperature variations, sunlight and oils from the human skin.)

So they devised an accelerated aging process, which they proceeded to apply to everything.

If these exaggerated conditions (like intense artificial sunlight around the clock for months on end) produced even a suggestion of unacceptable fading or color change, the offending material was changed, re-tested, and changed again until it met their standards.

The result of these pains is, if we



do say so ourselves, a truly luxurious interior.

And, though the dictionary says that the word "luxury" comes from the Latin word for "excess," we prefer to think of it like this:

It's not that we've taken the quest for perfection to excess.

It's simply that others haven't taken it far enough.

LEXUS

LETTERS

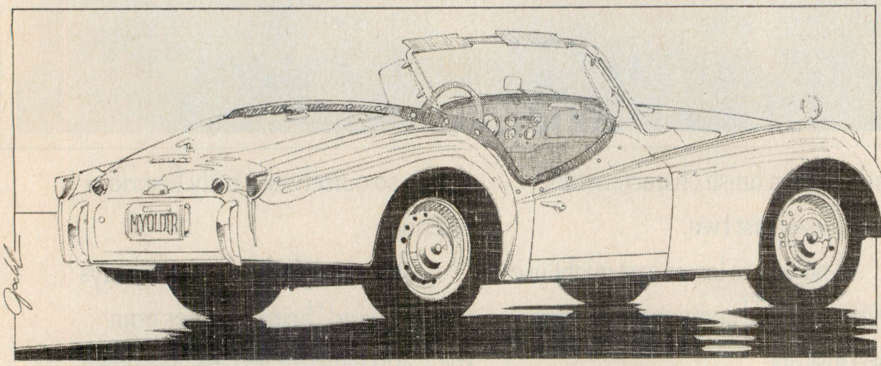
Sports Car Low-Down

Though I agree with most of your choices for the 10 best sports cars, I feel you neglected the Japanese cars on this list. How could you exclude the Datsun 240Z, Honda CRX, and Toyota MR2? Especially the 240Z; when it appeared in 1970, it set the entire sports-car community on its ear with its combination of ergonomics, performance, and low price that was unmatched at the time.

Speaking of Japanese cars, you folks must be drooling at the thought of 1990 Import Car of the Year. Since the '90 model year will probably have the largest number of new-car introductions from the Japanese in a long time, trying to decide the winner could be a major ordeal, to say the least. My early guess will be either the second-generation Acura Integra or the second-generation MR2. What are your guesses at this point?

Raymond Chuang
Mountain View, Calif.

Our only guess now is we're going to have a great time selecting the ICOY winner for 1990. As to your first point, our Top 10 sports cars list was restricted to open 2-seaters, which meant the Datsun 240Z, Honda CRX, and Toyota MR2 failed to qualify.—Ed.



JOE GOEBEL

In response to your cover story, I have to ask if a car called the X1/9 slipped your mind. Granted, it wasn't the fastest car ever built, but it sure was a blast to drive! It even managed to survive 15 years in the American auto market and was still being produced after Fiat gave up. Bertone should have found someone else to carry the torch instead of killing the X1/9. What a great little car. You didn't even mention it in your introduction to the story. Shame on you all!

Scott A. Savage
Northlake, Ill.

I enjoyed the article on Top 10 sports cars, but was surprised by a small error made by Dean Batchelor and company concerning the history of the Corvette. Batchelor stated that the Stingray name was used from 1968-1977, then dropped altogether in 1978. If memory serves me right, my new '77 Corvette was Stingrayless, with only crossed flags to replace the well-known moniker on the fenders. The Stingray body was still intact in 1977, but much to my chagrin, the name was gone forever. A great article, though, with a fantastic amount of research. Keep up the good work.

D. Craig Mullins
Wise, Va.

Thanks for the kind words, Craig. It might be that your memory is failing you a bit, though. Chevrolet press photos show the Stingray badge on the '77 model.—Ed.

I have been privileged to own four of the automobiles on your list of the Top 10 sports cars of all time in the April issue: the Alfa 1600 Spider, Austin-Healey 100-4, MG TF-1500, and TR-3A. Although it's a question of individual choice, my personal favorite among this group has always been my white TR-3A.

I own two restored Triumphs today, and they are still a joy to drive. Anyone who can recall putting out a cigarette on the pavement while driving at 60 mph will remember the exhilaration of those low-slung TR doors. Thanks for including this great little car on your list!

Joseph S. Cornell
Summit, N.J.

Topless and Cheap

I was reading your article on the topless Testarossa, and I seriously don't know how you do it. You took a $400,000 car and made it sound like an all-show, no-go car with a worn clutch.

Jeffrey Goodhart
Reading, Pa.

No Difference

The *Motor Trend* Truck of the Year is a bad idea whose time has come. All these trucks were tested as if there was

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no difference between the purpose of cars and trucks. There was no mention of payload, towing capacity, or ground clearance, only talk about car-like this and car-like that. Since all the categories in this test were the same as the Car of the Year test, and since the general public as well as *Motor Trend* is unable to comprehend the difference between a truck and a car, I suggest the following: Conduct one combined test per year with cars competing against trucks and bestow a prestigious Vehicle of the Year award. Please, *Motor Trend*, continue your tradition of intelligent journalism and give the public what it really wants, a showdown between the Ford Ranger 4x4 and the Thunderbird Super Coupe!

Sid Campbell
Fullerton, Calif.

As we mentioned in the article, we review the trucks as they fit in the personal-use category, because statistics show approximately 95% of these vehicles are driven as cars.—Ed.

Keeping Their GUARD Up

Thanks for calling my attention to GUARD. I wrote to advise my support for its efforts. You speed maniacs cause your magazine to lose all reasonable perspective on motor vehicle accident prevention. Everybody should have the freedom of safe travel and not be exposed to your leadfoot-driving viewpoint.

K.H. Daniels
Indianapolis, Ind.

I support GUARD wholeheartedly. Your article expresses opinions that are so much bunk. I can't imagine your staff or readers swallowing it. One area where you were right-on was when you mentioned that radar detectors are a $200 million a year industry. That's the bottom line. Anything to make a buck, even if it's a gadget to help drivers disobey the law.

If you were a parent who's trying to raise children to respect the law, and they were approaching driving age and asked what that gadget was on your car, what would you tell them? Would you tell the truth and say it's a device to help you break the law and not get caught, or would you give them bunk about protesting an unreasonable law?

Su Breidel
Sparta, N.J.

I've been a subscriber to your magazine for decades. I wish to state that your March '89 Washington Report was excellent and of prime importance to the driving public.

Your exposure, as well as those appearing in other automotive magazines, of double-standard underhanded organizations such as GUARD will tell the truth to a percentage of readers. Driving is one of life's pleasures; freedom is another. Bureaucratic organizations are always intent upon destroying both while reaping huge profits for a sideline benefactor, insurance companies!

I hope you do not let up or loosen the reins on editoral power in the future.

Chas. E. Claussen
Shreveport, La.

Sonata Note

I like the new Mitsubishi Galant as Import Car of the Year, but what happened to the Hyundai Sonata? It was nowhere to be seen.

John E. Bowers
Bremerton, Wash.

Unfortunately, Hyundai was unable to supply us with a car for the competition at the last minute, even though it was extended an invitation to enter.—Ed.

A Tough Life

I read your magazine and learn a lot from it, as it's indispensible in my profession as a retail automobile salesperson.

I don't understand why you guys, along with everybody else who writes articles on buying new cars, always have to show "dealer cost." I mean, if you're going to write what dealer cost is, you should at least make your figures accurate.

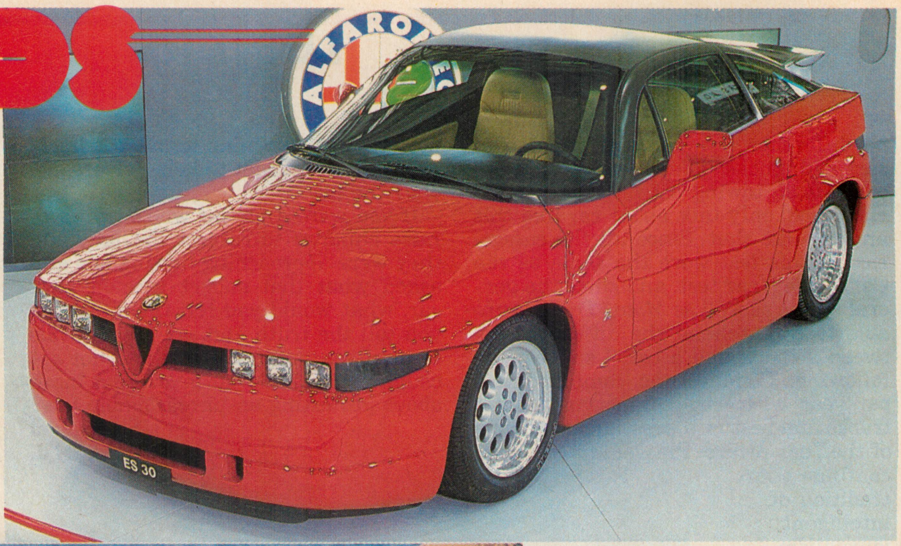
You guys sit there and write your articles and get paid probably $30,000-75,000 a year doing it. Did you know that the most a salesperson makes when he sells a car at dealer cost is $50-75? If we sell 15 units a month (and I'd like to see one of you sell just 10!) at those minimum commissions, that's $9000-13,500 a year. Not bad for working 50-60 hours a week. How come nobody writes articles on the dealer cost of washers, stereos, magazines, and blue jeans?

Why don't you write an article about what the automobile salesperson has to put up with and the work he has to do just to see "taillights down the road."

Jim McAuley
Perrysburg, Ohio

GENEVA '89: FROM ALFA TO OMEGA

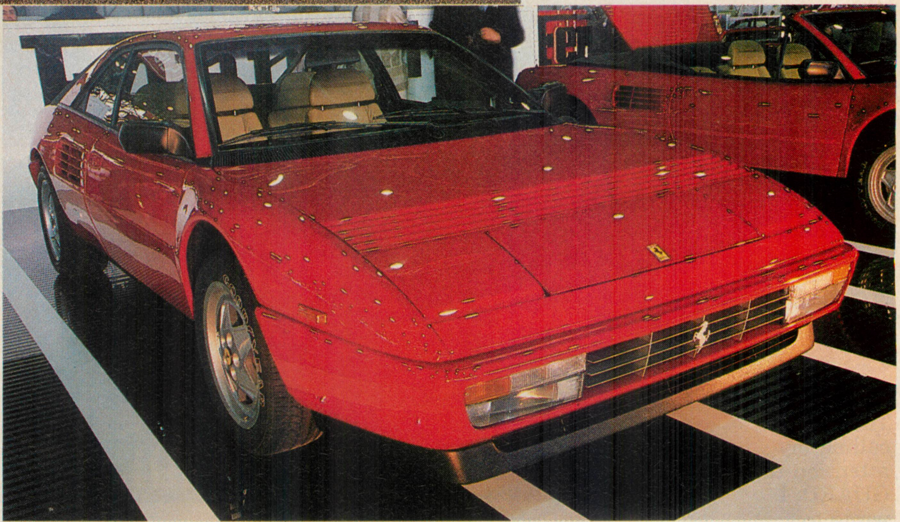
It may not have the scale of Frankfurt or Tokyo, but the annual Geneva Auto Salon never fails to provide several delightful surprises. This year's show ran true to form. A number of cars previously seen in these pages made their formal European debuts. Among the notables: the new Mercedes Benz 500SL, Corvette ZR-1, Acura NS-X, and Autech Zagato Stelvio, along with second-channel offerings from Lexus and Infiniti. The roster also included lesser touted but equally intriguing newcomers.

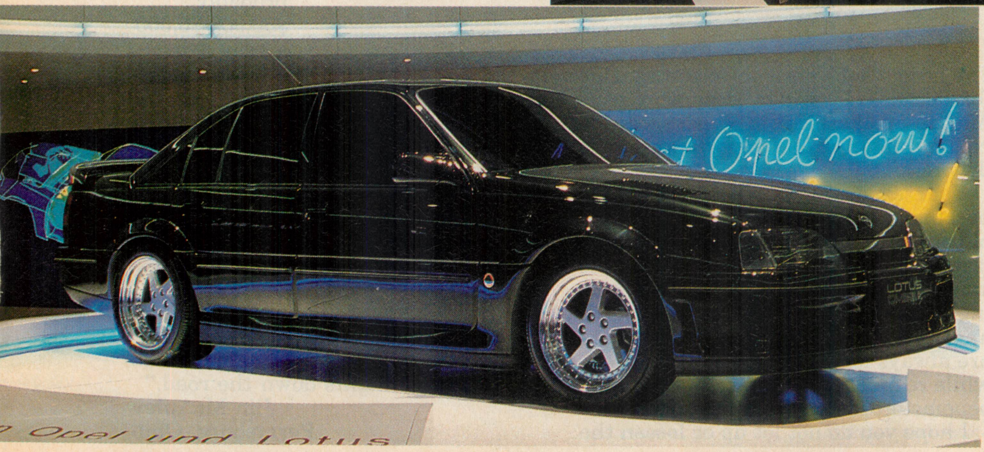


△ **Alfa Romeo** showed its new limited-edition coupe, ES-30, a joint effort with Zagato spun off the Milano/75 platform. Set to go into production at a rate of 15 per week, the rakish 2+2 is powered by a 210-hp version of the Alfa 3-liter V-6.

◁ **Bitter Automobile** displayed its new Type 3 convertible. Set to go on sale in the U.S. in late 1989, this upscale 2-seater is powered by a 250-hp 24-valve 3-liter inline six and capable of 140 mph. Also on hand was a luxury 4-door sedan.

▷ **Ferrari** took the wraps off its new Mondial 8t, powered by a 3405cc variant of the existing 3186cc V-8. The punched-out engine, which makes 285 hp with catalysts and 300 hp without, drives through a transverse 5-speed transmission. The crossways gearbox, first seen in Ferrari's '75 Formula One cars, improves handling by allowing the midships powertrain to be lowered 5 in. in the chassis. Exterior changes are modest: slightly smaller side strakes, subtly altered rear panels, new body-color door handles, and downsized homofocal headlamps.





◁ **GM Europe** thrilled showgoers with its Opel Lotus Omega. This handsome limited-production luxury tourer has a new 360-hp twin-turboed and intercooled 3.6-liter inline six engine designed by Lotus Engineering, making it the world's most powerful production sedan. Like the ZR-1 Corvette, the Omega also drives its rear wheels through a ZF 6-speed trans. GM claims 0-60-mph times under 6 sec and a calculated top speed in excess of 160 mph.

PHOTOGRAPHY BY
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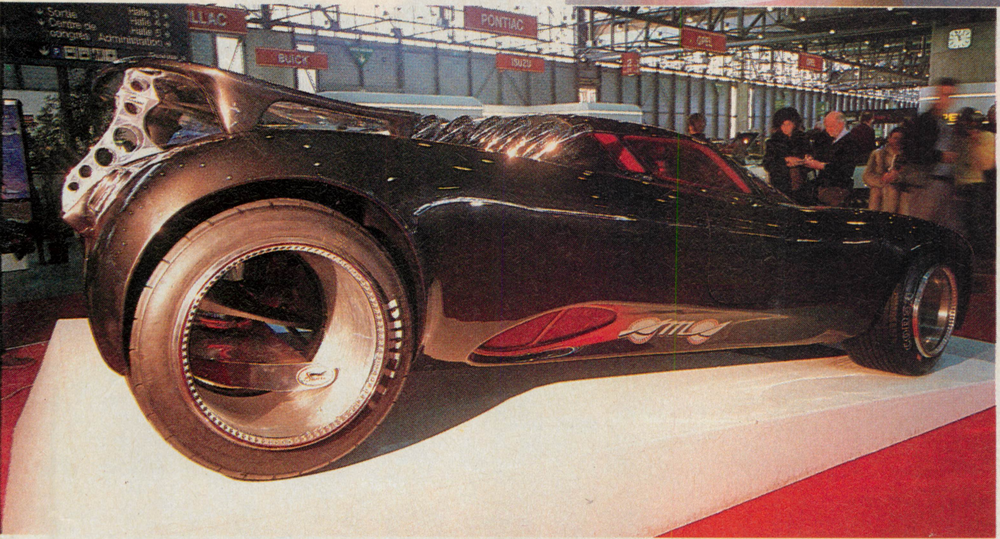
△**Ford** had a pair of aces on its stand. The popular Fiesta has been completely redesigned and is significantly larger in every dimension. The roomy subcompact is available in both a 3-door and a new 5-door configuration. Six engines from 1 to 1.6 liters are available, with a turbo variant due shortly. New options include anti-lock brakes and Ford's version of the CVT automatic. Highlight of the display was the new Ghia-designed Via. Billed as "the sports car of the year 2000," this highly aerodynamic space-efficient 4-seat 4-door hatchback is powered by a transverse turbocharged V-8 and has a 6-speed gearbox. Advanced fiber-optic headlamps, computer-controlled rear spoiler, photosensitive glass roof, individual climate control systems, and a high-tech fiber-optic illuminated "floating instrument panel" are but a few of its more revolutionary features.

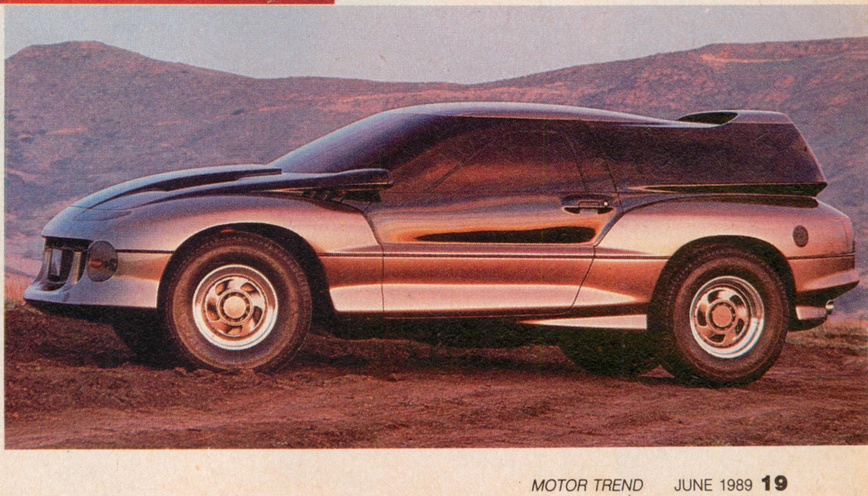


△**Volkswagen** showed its Rally Golf, an all-wheel-drive homologation special powered by a 160-hp 16V four and fitted with anti-lock brakes. Volkswagen AG plans to build 5000 units, with 50 to 350 of those headed for the U.S.

◁Respected Swiss designer **Franco Sbarro** stunned the crowds with his latest creations, the most spectacular being his new Dream Car. This swoopy concept vehicle features a revolutionary hubless wheel that locates the main bearing on a supporting arm onto which the inner circumference of the wheel rim is locked. To allow braking, the perimeter disc is also located around the inner circumference, the caliper being part of the supporting arm. Sbarro showed a motorcycle, bicycle, and F1 car that incorporated his new "Magic Wheel," for which he has eight patents pending.

▷**Vehma International**, a multifunction automotive design and development consortium formed by Canadian-based Magna International, showed its new, awd Torrero. The sinister-looking composite-bodied 4x4 is powered by an 8.1-liter all-aluminum 24-valve V-8 that makes 535 hp and 570-lb-ft of torque, enough to propel the 4900-lb Torrero to 150 mph. With a 112-in. wheelbase, the 189-in. long. 79-in. high, 63-in. wide all-terrain terror has a video camera at each corner to help during parking maneuvers. Among the $270,000 Torrero's other attributes are a fully independent suspension, leather-swathed 4-passenger interior, ABS, and special V-rated Pirelli tires. Vehma President Manfred Gingl hopes to put the Torrero into limited production in 1992-93 and has shown it to Chrysler, Ford, and GM in hopes of securing a production partner.

—Michael Cotton



SOME OF TODAY'S MOST POWERFUL CARS COME EQUIPPED

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The Porsche Turbo Carrera. The BMW M5. The Corvette ZR1. These are cars that can fly.

They're just a few examples of cars being built today that are taking standards of high performance automotive technology to new heights.

In response, we at Michelin have developed tires that are designed to keep everything firmly planted on the ground.

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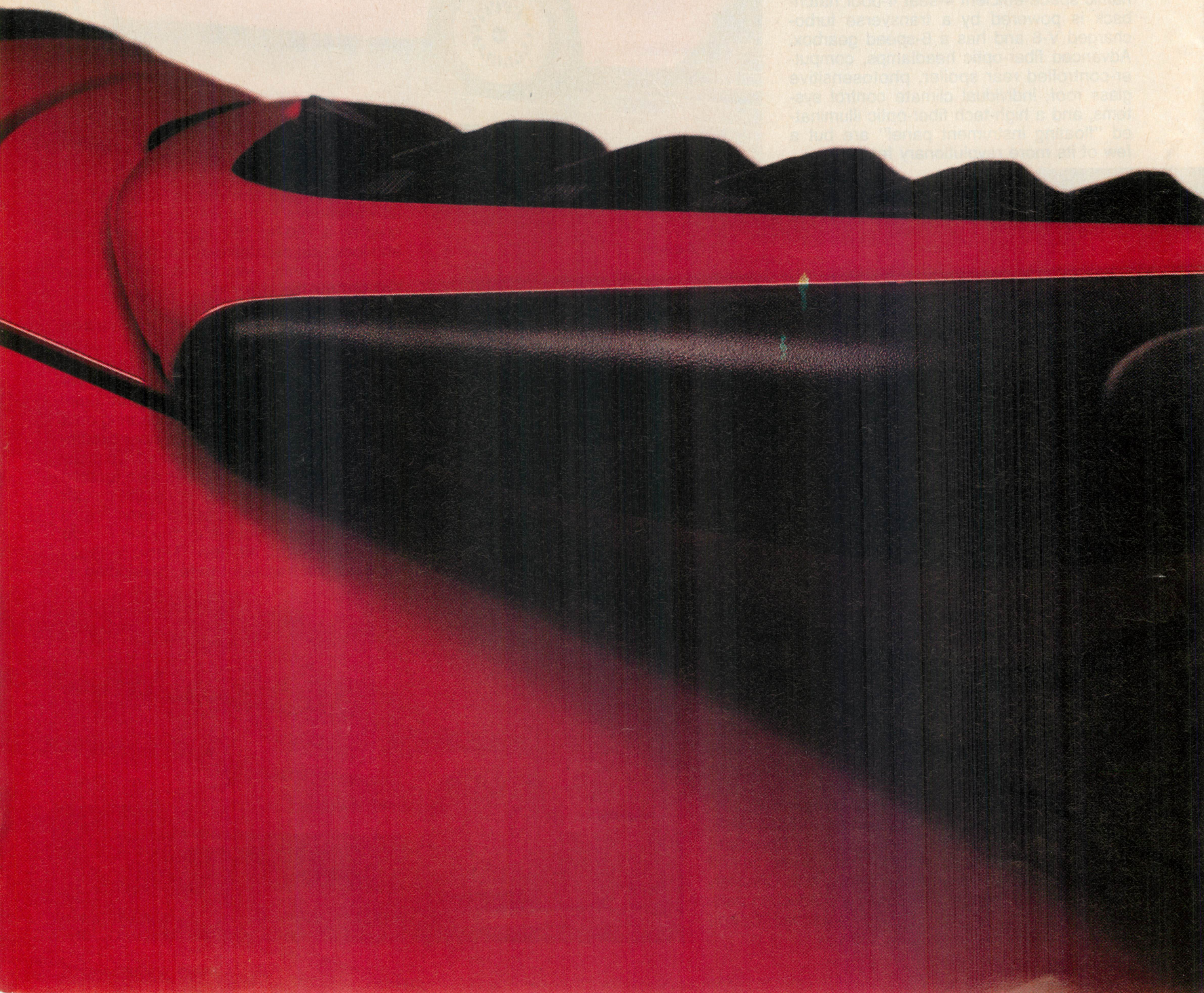
Carrying the Z rating, the highest speed rating for performance tires, it's capable of sustaining speeds of 150 mph and more.

A patented belt package consisting of a single steel belt wrapped in Kevlar®—a fiber seven times stronger by weight than steel—helps the tire withstand the enormous forces that such speeds can generate.

Of course, it isn't necessary to exceed the speed limit to appreciate the benefits of Michelin technology.

You can get the idea simply by taking a few corners for everything they're worth.

Fact is, Michelin's Sport XGT Plus is the same tire that pushed lateral acceleration figures for production



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cars to a new level.

On both a Corvette and a Porsche, the XGT Plus broke the 1.0 g barrier, something once thought to be attainable only by racing-modified cars on racing tires.

Equally important, the XGT Plus shares a family trait with all other Michelin Sport Line tires: a high degree of progressivity.

This means that the tires, when pushed to their limit, are engineered to inform you of that fact by losing adhesion gradually—progressively—rather than suddenly.

So, if you own a car capable of reaching great heights of performance, make sure the tires are capable of performing on the same level.

It could spell the difference between a car that lets you fly when you want to, and one that sends you flying when you least expect it.

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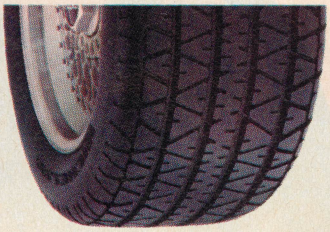

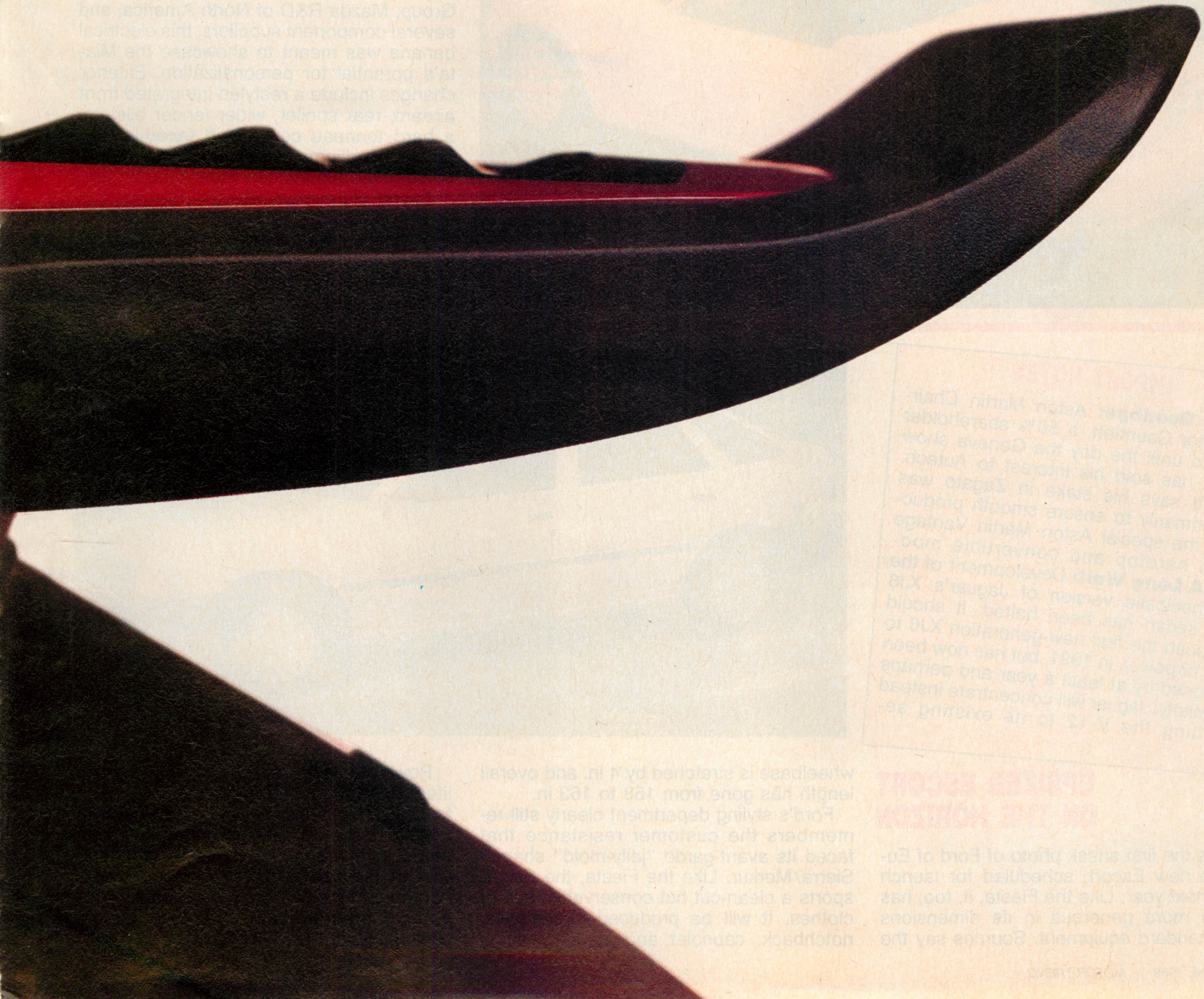

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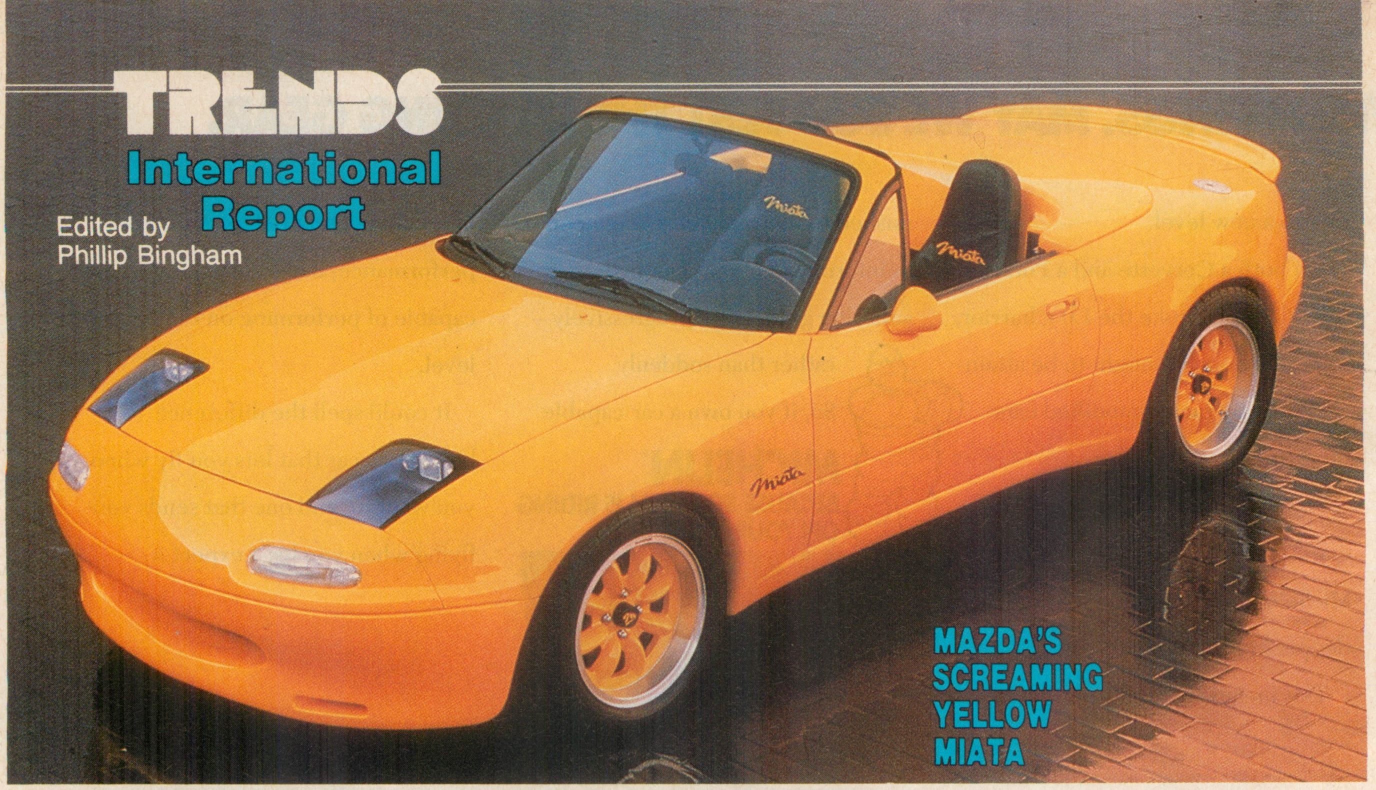
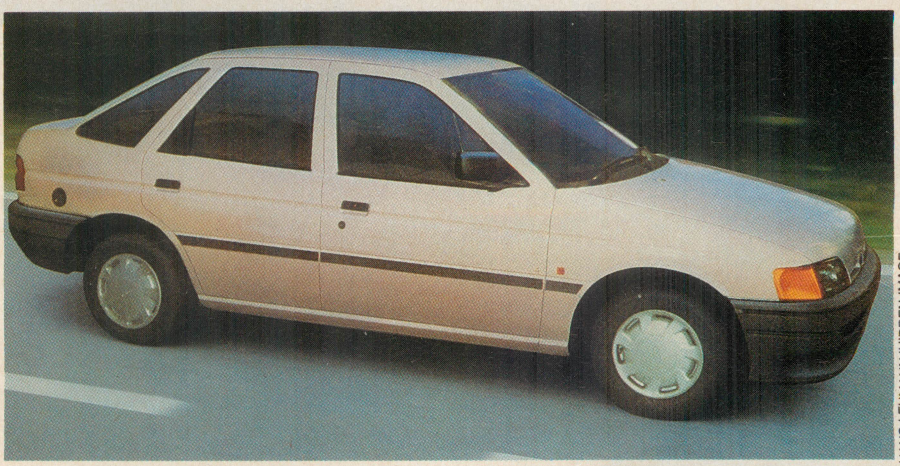


MAZDA'S SCREAMING YELLOW MIATA

It's only a concept car at the moment, but this flashy little MX-5 Miata one-off, formally dubbed the Club Racer, has real possibilities for the future. Designed jointly by Mazda's U.S. Special Vehicle Development Group, Mazda R&D of North America, and several component suppliers, this electrical banana was meant to showcase the Miata's potential for personalization. Exterior changes include a restyled integrated front airdam, rear spoiler, wider fender blisters, a hard tonneau cover, and faired-in low-profile headlights under plexiglass. Functional upgrades include wider tires on color-keyed Panasport wheels, Bilstein gas shocks, locking fuel-filler door, low-restriction exhaust, supplemental gauge package, Momo steering wheel, and competition safety belts fitted to each of the leather-covered seats.

IMPORT NOTES

Zagato Goodbye: Aston Martin Chairman Victor Gauntlett, a 50% shareholder in Zagato until the day the Geneva show opened, has sold his interest to Autech. Gauntlett says his stake in Zagato was taken primarily to ensure smooth production of the special Aston Martin Vantage Zagato hardtop and convertible models . . . **A Long Wait:** Development of the long-wheelbase version of Jaguar's XJ6 luxury sedan has been halted. It should have been the first new-generation XJ6 to get V-12 power, in 1991, but has now been postponed by at least a year and perhaps indefinitely. Jaguar will concentrate instead on fitting the V-12 to its existing sedan.



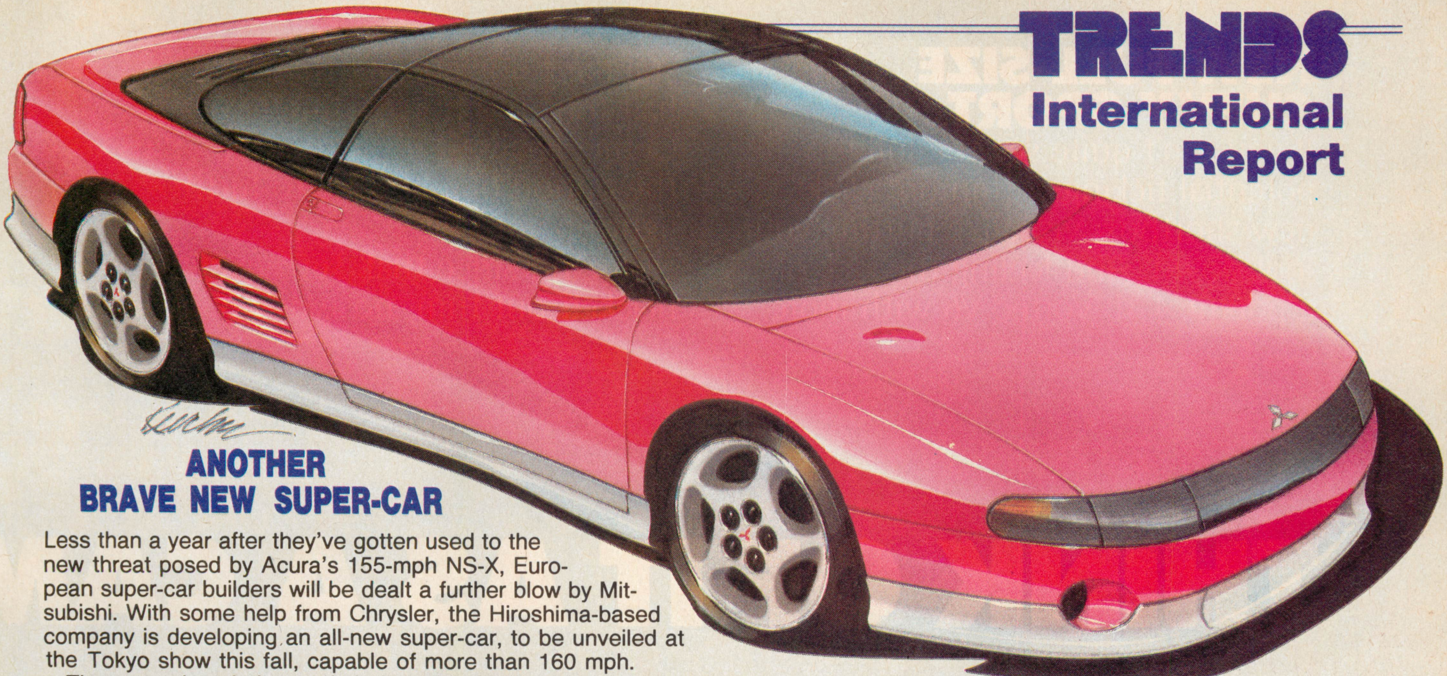
HANS LEHMANN/HIDDEN IMAGE

UPSIZED ESCORT ON THE HORIZON

This is the first sneak photo of Ford of Europe's new Escort, scheduled for launch early next year. Like the Fiesta, it, too, has grown more generous in its dimensions and standard equipment. Sources say the wheelbase is stretched by 4 in. and overall length has gone from 158 to 163 in.

Ford's styling department clearly still remembers the customer resistance that faced its avant-garde "jelly-mold" shaped Sierra/Merkur. Like the Fiesta, the Escort sports a clean-cut but conservative suit of clothes. It will be produced in fastback, notchback, cabriolet, and station wagon.

Powerplants will spread from 60 hp/1.3 liters to 130 hp/2 liters. The current 1.1-liter screamer will be dropped, in line with Ford's desire to take each replacement model a little farther upmarket. Top models will be blessed with Teves electronically controlled anti-lock brakes in place of the current mechanically operated Lucas-Girling system.



DUANE KUCHAR

ANOTHER BRAVE NEW SUPER-CAR

Less than a year after they've gotten used to the new threat posed by Acura's 155-mph NS-X, European super-car builders will be dealt a further blow by Mitsubishi. With some help from Chrysler, the Hiroshima-based company is developing an all-new super-car, to be unveiled at the Tokyo show this fall, capable of more than 160 mph.

The new oriental charger is believed to be based on a widened version of the Galant platform, although you'd never guess. Unlike the NS-X, which is mistakably reminiscent of Ferrari's pretty 328 model, the new Mitsu is daringly original in shape. It borrows heavily from Mitsubishi's record-breaking HSR show car, which means it'll be long and low and racy, distinguished by a curvaceous nose, shallow hoodline, bubble-shaped cockpit canopy, low-slung rear deck, and wide, muscular haunches. Sources say the car, which may wear Mitsubishi Starion/Dodge Conquest badges, has been formed partly by Mitsubishi's design staff in Japan, partly by its styling studio in California. Chrysler is thought to be helping mostly with the interior.

The brave new Mitsubishi will also differ from the NS-X in its technical approach. Whereas Acura pursued cleanliness and simplicity, Mitsubishi will enthusiastically embrace high-tech solutions. The mid-engined rear-drive Acura, you may remember, uses a normally aspirated 3-liter V-6 to give "more than 250 hp" and a top speed of 155 mph. The front-engined Mitsubishi will be all-wheel-driven by an all-alloy 30-valve 3-liter V-6 boosted by two intercooled turbochargers, allowing 320 hp, 300 lb-ft of torque, and nearly 165 mph. Something for the likes of Lotus, Porsche, and Ferrari to think about.

HANS LEHMANN/HIDDEN IMAGE

MORE GLAMOUR FOR VOLVO

Spied at a proving ground, this car shows that Volvo is once again contemplating production of an open-top version of its 480 ES coupe. The Swedish company's Dutch affiliate, Volvo BV, which designed and built the 480, previously released official photos of a full-convertible prototype, but this has since been vetoed by board members for fear of jeopardizing Volvo's safety image. The current thinking is to build a targa top version of the 480 instead, simultaneously allowing wind in the hair and sturdy, inexpensive rollover protection. The car seen here employs two removable roof panels that can be stowed in the trunk.

Volvo has also responded to criticism that the 480 looks like a sporty coupe but lacks the power to drive like one: A new 480 Turbo model goes on sale in Europe this spring with a Garrett T2 blower strapped to the standard car's 1.7-liter 4-cylinder engine. This bumps output from 109 to 120 hp and from 103 lb-ft of torque at 4000 rpm to 129 lb-ft at 1800. In other words, Volvo has chosen to give the car sharp low- and mid-range throttle response rather than rip-roaring power, a ploy that makes the engine feel larger and may be partly intended to appeal to U.S. buyers. It seems likely the 480 will be made available stateside, after all, but there's still no official confirmation.

The Turbo, which manages 0-60 in less than 9 sec and a top speed of 124 mph, is also equipped with Teves anti-lock brakes and stiffer dampers than its brethren.

IMPORT NOTES

Where's the Boss? Although Lotus Engineering Director Tony Rudd was present at the Geneva show to receive applause for the new Corvette ZR-1 engine, Managing Director Mike Kimberley was conspicuous by his absence. Being groomed for greater things, perhaps, Kimberley was incarcerated at the Harvard Business School in a 12-week course and wasn't allowed out . . . **Even This Needs Tires:** Meantime, busy developing its active suspension system, Lotus Engineering has entered a collaborative program with Goodyear. The computer-controlled hydraulic ride system could reach production by model year 1992 on the Chevrolet Corvette and is likely to appear on a Cadillac soon after . . . **Been and Gone:** Vincenzo Lancia's widow, Adele Miglietti, has died at age 90. After her husband's death in 1937, she managed Lancia for 11 years, but her son, Giovanni, then steered the company down the slippery slope that ended in its acquisition by Fiat in 1969 for just one lira . . . **Every Cloud Has a Silver Lining:** Vittorio Ghidella, controversially relieved of his post as managing director of Fiat's auto division, is now working as a consultant to Ford. Ghidella—the mastermind behind Fiat's 1980s return to European prosperity—is said by Italian sources to be encouraging Ford to purchase Maserati. Those same sources say Ford is paying Ghidella close to $20,000—*per day* . . . **Born in the USA:** Nissan's new upscale Infiniti division has asked the Automobile Specialty Company (ASC) of Michigan to design the bodywork for its M30 convertible model, due next year. The M30 is for the U.S. market only, and Nissan says ASC, which also developed a drop-top Celica for Toyota, can more accurately understand U.S. consumer tastes . . . **The Rich Get Richer:** Jackie Stewart, three-time world auto racing champion turned test driver, speaker, and consultant, has signed another five-year deal with Ford. Stewart is additionally retained by Rolex, Moët et Chandon, and Goodyear.

NEW FULL-SIZE CHEVY SPORT.

If you can't quite see the full fun potential ticking within our slick new shortbox, visualize putting your foot down. And feeling the kick of *a potent* 4.3L Vortec V6 with more standard horsepower than Ford's half-ton: 160 horses, hitched to a Getrag-licensed 5-on-the-floor. Plus the option of a 350 V8 to further light up your life.

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aggressive on its feet, joy of truckin' is pure advanced half-ton Chevy underneath, you're also looking at a bigger, heavier frame than Ford; more two-sided galvanized steel, and a gleaming clear-coat finish Ford doesn't offer. All wrapped in our comprehensive Bumper-to-Bumper Plus Warranty protection.*

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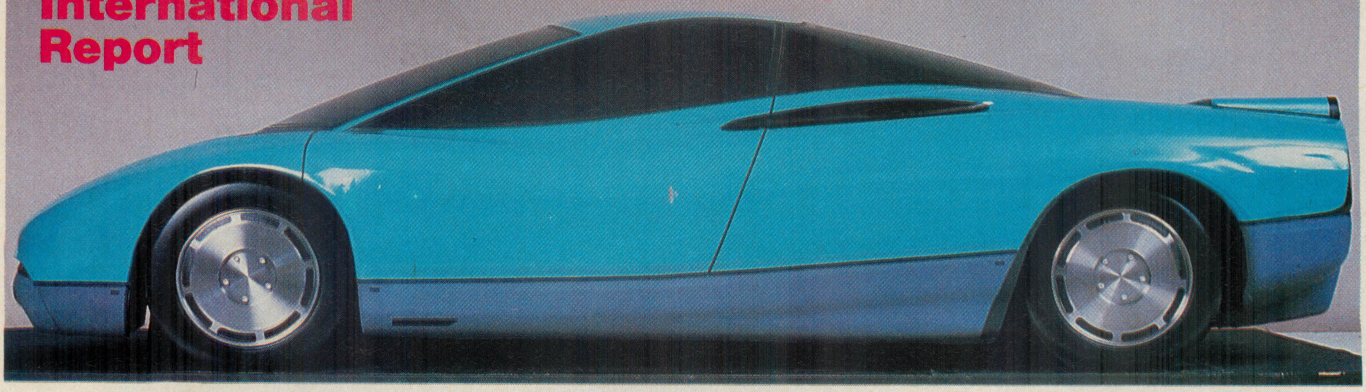
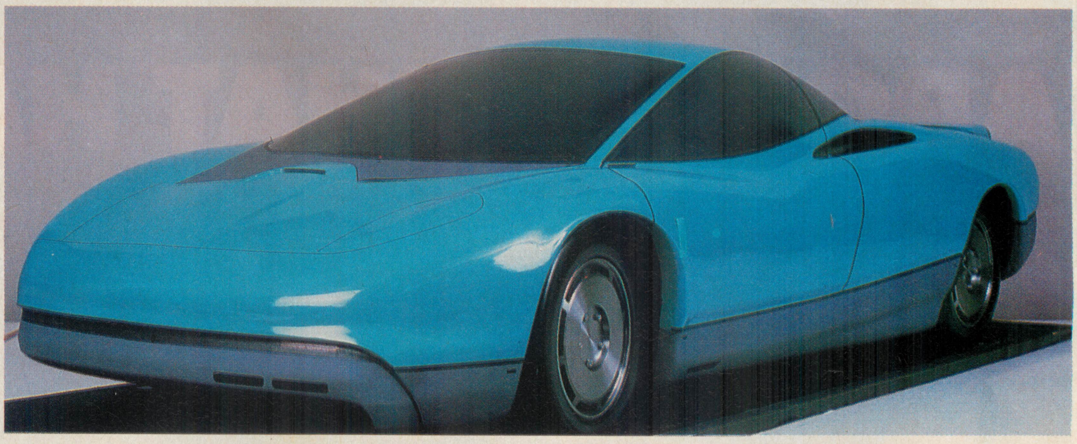
International Report



MARCH READIES A QUICK ONE FOR THE ROAD



Call it an exercise in blue-sky engineering, for now at least. But March Engineering, Robin Herd's Bicester-based race car manufacturing group, is hoping that, someday in the not too distant future, this exotic beauty may become a reality. Currently tabbed the Scar and carrying a proposed pricetag of $270,000, this radical, open-topped mid-engined super-car is aimed at the likes of the Ferrari F40, Porsche 959, and Jaguar XJ220. The original project was inspired by March Managing Director Dave Reeves and modeled by Ken Greeley, of Aston Martin Virage and Panther Solo fame. While a full-size chassis mockup has been crash-tested, the major stumbling block at the moment involves finding a proper engine, which March claims would have to produce about 500 hp and likely be of a V-12 configuration. One other key element necessary before the Scar can proceed is working capital. March is currently looking for an outside partner in the venture, ideally one that could offer money as well as certain kinds of specialized expertise.

NEW EXCEL COMING SOON

Hyundai is putting the final touches on a new Excel, set to go on sale later this year. This prototype, spied testing in Canada, shows the next-generation subcompact has softer, rounder contours much like its big brother, the Sonata.

HANS LEHMANN/HIDDEN IMAGE

AUDI SLASHES QUATTRO PRICES

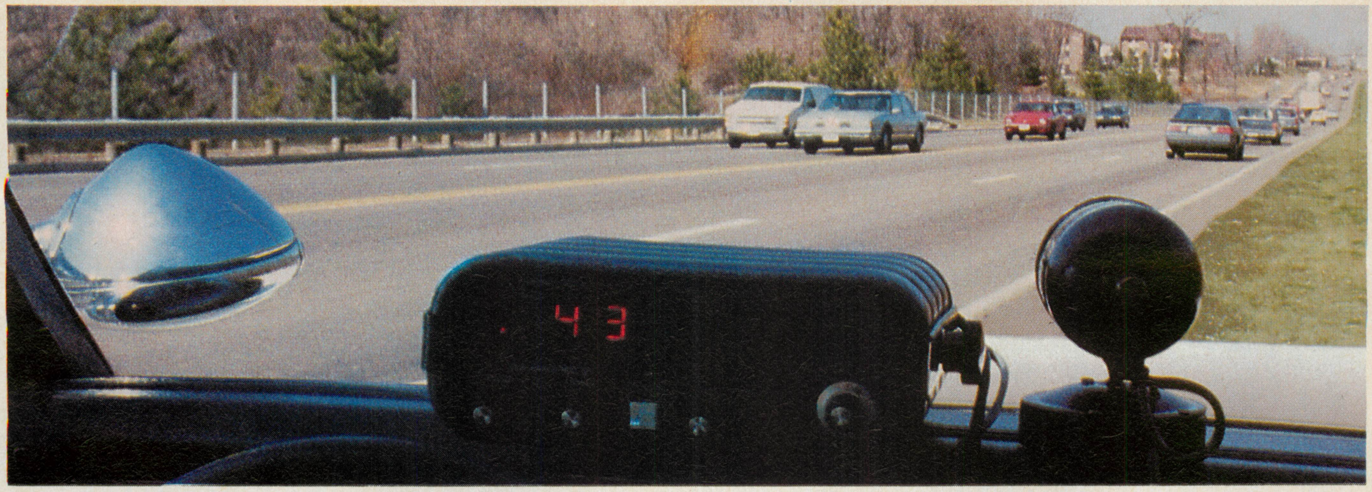
Dr. Carl Hahn, chairman of the VW-Audi group, confirmed hot rumors at the Geneva Auto Salon by announcing dramatic reductions in the prices of Audi's Quattro sedans and VW's 4wd Syncro equivalents. European prices, he said, would be reduced immediately by up to DM 5000 ($2660) as Audi's production of 4wd sedans passed the 150,000 mark. Furthermore, checks would be posted to all customers since Jan. 1, 1989. While several European importer countries were quick to follow suit, no decision has yet been made on U.S. prices.

Dr. Hahn made a virtue of a highly embarrassing economic truth, that the Volkswagen group's pricing of 4wd family models has been out of reach of the typical customer profile. It took Opel's and Peugeot's less costly 4wd systems to force VAG to review its structure. Hitherto, massive price reductions have been an anathema in the auto industry for fear of upsetting customers as their automobiles consequently fall in value.

While Opel and Peugeot have offered simple 4wd systems at a 10% price premium, Audi has based its pricing on a 25% and upward premium; now it's reduced to 15-20%. Quattro sales, once around 10% of Audi's volume, have fallen in the past two years. *—Michael Cotton*

MERCEDES INTRODUCES USED-CAR WARRANTY

Mercedes-Benz of North America has introduced a new warranty that covers used vehicles with up to 100,000 miles. Certain restrictions apply, notably that the car must pass muster on an 84-point checklist and have originally been distributed and sold through an authorized dealer (no gray-market models). But for approved vehicles, owners are guaranteed no-charge/no-deductible service at any Mercedes dealer in the country. For higher-mileage cars, a 12-month warranty covers the powertrain, brakes, steering, suspension, cooling, and electrical and climate control systems. Cars with fewer than 75,000 miles can be covered by a second plan that also adds 12 months of powertrain coverage.



Traffic radar doesn't say which car is being clocked, it merely flashes a number. The radar operator must then try to determine which vehicle produced the reading.

Why radar makes mistakes. How to protect yourself.

Although nine different errors have been documented for traffic radar, the most common source of wrongful tickets is mistaken identity.

It's hard to believe, but traffic radar does not identify which vehicle is responsible for the speed being displayed. It shows only a speed number and nothing else. The radar operator must decide who is to blame.

How radar works

The radar gun is aimed at traffic and it transmits a beam of invisible radar waves. Each moving object within range reflects these invisible waves back to the radar gun. Using the Doppler principle, the radar calculates speed from the reflected waves.

Traffic radar is blind

Traffic radar works differently from military, air-traffic-control, and weather radars. The others use rotating dish antennas in order to track many objects simultaneously.

Traffic radar uses a far smaller, far cheaper, gun-shaped antenna. This simplification requires traffic radar to ignore all reflections but the strongest. The number displayed is speed calculated from the strongest reflection.

The best guess

Remember, these reflections are invisible. Truck reflections can be ten times stronger than car reflections. How can the operator know for sure which vehicle is responsible for the number?

The truth is, he can't be sure in many cases. The result is mistaken identity. You can be ticketed for somebody else's reflection.

Self defense

The only way to defend yourself against these wrongful tickets is to know when radar is operating near you. Others agree with this method. In his verdict upholding a citizen's right to use a radar detector, Judge Joseph Ryan, Superior Court, District of Columbia, wrote:

"If government seeks to use clandestine and furtive methods to monitor citizen actions, it can ill afford to complain should the citizen insist on a method to effect his right to know he is under such surveillance."

We can help

We specialize in radar warning. And Escort and Passport do far more than simply find radar. Upon radar contact, the alert lamp responds and the meter shows radar signal strength. At the same time, you will hear an audio warning —pulsing slowly when the radar is weak, quicker as it strengthens, then constant as you approach close range. When you know exactly how strong the radar waves are, you'll know when the radar unit is near enough to actually have you under surveillance.

Expert's Choice

Escort and Passport are the most effective radar-warning instruments available. But don't take our word for it. *Car and Driver, Popular Mechanics* and *Roundel* magazines have each published independent tests of radar detectors. And each gave us the highest ratings. Just call us toll-free and we'll send reprints of the complete tests, not just excerpts or quotes.

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We sell directly to you, and we guarantee your satisfaction. If you're not entirely satisfied within 30 days, return your purchase. We'll refund your money and shipping costs.

To order, call toll-free. Orders in by 6:00 pm eastern time go out the same day by UPS and we pay the shipping. Overnight delivery is guaranteed by Federal Express for only $10 extra.

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For our free engineering report "TRAFFIC RADAR: How it works, and why it gets wrong readings," call us toll free 1-800-543-1608.

THE BMW 525i IS SLOWER, LESS MAYBE IT'S THE NEW MATH.

It didn't seem odd to our engineers that the new Volvo 740 *GLE 16*-valve outperformed the BMW 525i from 0-55 mph.* After all, the 153 horsepower, twin-cam may be Volvo's most advanced engine to date.

It certainly wasn't peculiar to our designers that the Volvo offers more front headroom and rear legroom. With standard amenities such as heated seats, air conditioning and a power sunroof, the Volvo interior is a model of ergonomic

*Independent tests for 1989 automatic transmission models.

†1989 manufacturer's suggested retail prices.

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ROOMY AND COSTS $10,000 MORE.

achievement (i.e., it's a pleasure to sit in).

And it didn't come as a surprise to Volvo enthusiasts that the 740 GLE 16-valve provides safety features such as a driver's side Supplemental Restraint System (unlike the BMW) and an anti-lock braking system (just like the BMW).

What everyone agreed was bizarre, however, was the fact that the BMW costs an alarming $10,000† more. (Perhaps that follows the same "Pay more, get less" equation fancy restaurants employ.)

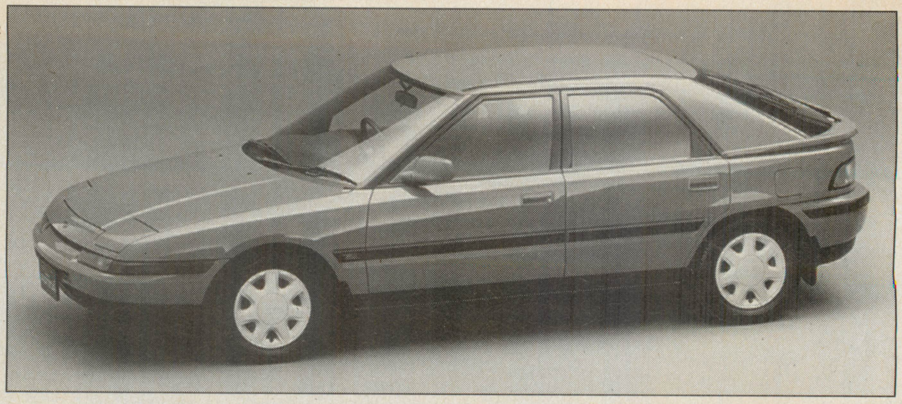
Test drive the new Volvo 740 GLE 16-valve. For an understandable sum, you'll not only acquire a vehicle deemed a joy to drive, you'll be investing in Volvo's legendary reputation for safety, reliability and longevity.

And that, unlike many of today's sticker prices, makes all the sense in the world.

INTRODUCING THE 740 GLE 16-VALVE.

VOLVO
A car you can believe in.

International Report



MAZDA'S BEST-SELLER GETS 4-DOOR FASTBACK

The car most important to Mazda's balance sheet, the Escort-sized 323, will be succeeded by three new models. Already on sale in Japan, the new 323 range features a 3-door hatchback, 4-door sedan, and distinctive 4-door fastback hatch called the Astina. Mazda's previously simple and perhaps rather bland styling cues have been replaced by sharper creases and a lower, sloping hoodline, especially on the droop-snoot Astina.

Under the hood, 323 owners will find more power than before, thanks to the introduction of 16-valve heads for the familiar 1.3-, 1.5-, and 1.6-liter 4-cylinder engines. The 1.5- and 1.6-liter units are fitted with twin overhead cams and electronic fuel injection, the latter's variable induction control system helping it to make 130 hp. A turbocharged 323 with all-wheel drive and a station wagon additionally are expected to bow at the Tokyo show this fall.

The Mazda's MacPherson-strut suspension has been reworked, with sturdy crossmembers now on the front A-arms, while vertical movement at the rear has been lengthened to improve ride quality. And the manual 4- and 5-speed gearboxes get new primary shafts to allow a less-notchy shift action. A 4-speed auto, with electronic control, is also available.

The 323's mildly restyled interior offers fractionally more room now because of a 2-in. stretch in wheelbase, but—unlike many of its new rivals—the opportunity has not been taken to increase the car's overall length.

PEUGEOT FORTIFIES 405 LINEUP

Peugeot is expanding its fledgling 405 line with a pair of new models. First to arrive in the U.S. will be a handsome 4-door station wagon, which goes on sale this summer. Powered by the base 110-hp 4-cylinder engine, the wagon will be available in two trim levels, each with a climate control A/C, power steering and doorlocks among the many standards.

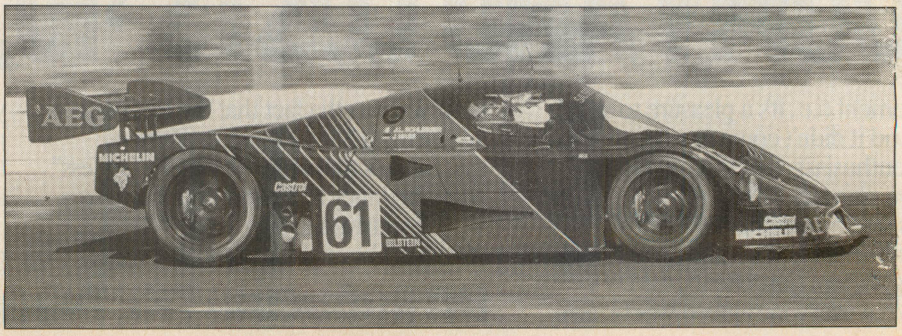
Already on sale in Europe and scheduled for an early 1990 debut here is an all-wheel-drive version of the 405 sedan. The Euro model lineup includes base and Mi 16 variants, and it's likely America will also get both. The 4x4 405s are fitted with a pair of full-time systems that split torque on a 53/47% basis and incorporate a locking center differential as well as a secondary Torsen differential that automatically sends power to the rear wheel with the most traction. With the "All-Weather" version, a driver can manually lock the diffs, which unlock automatically when road speed exceeds 16 mph. The computer controlled "High-Performance" driveline, which uses a viscous coupling in conjunction with the center differential, automatically maintains optimum traction under all conditions and varies the power splits as required. All 4x4 models get a new hydropneumatic rear suspension with electronically controlled ride height. Senior European correspondent Bernard Cahier has recently test-driven cars fitted with both systems. He reports that, while the additional weight—about 300 lb—trims a bit of acceleration, the handling bonus makes it a worthwhile tradeoff.

MERCEDES RAISES SPORT COMMITMENT

Nobody who watched the Sauber Mercedes racing in the 1988 World Sports Prototype Championship could have failed to note Daimler-Benz' deep commitment to the project, and in late February, five members of the company's main board hosted an international press conference to reinforce the commitment. The dark blue and silver Group C car, the C9/89, will race this year with a large three-pointed star painted on the nose, powered by a race version of the 32-valve 5-liter V-8 engine featured in the '89 flagship road cars, as well. With twin turbochargers, the engine develops 720 hp. Two cars will race all year, driven by Jean-Louis Schlesser, Mauro Baldi, Jochen Mass, and Kenny Acheson.

Board member Juergen Hubbert confirmed that the Mercedes-Benz division of Daimler-Benz has a five-year commitment to Group C racing and to the design of a 3.5-liter racing engine conforming to the regulations that will be introduced in 1991, but absolutely no details were disclosed. Hubbert expressly ruled out Formula One and rallies: "We want to compete with other manufacturers, not with brands of cigarettes or sausages!" Rallies, he said, "have such high safety risks that we do not want to participate."

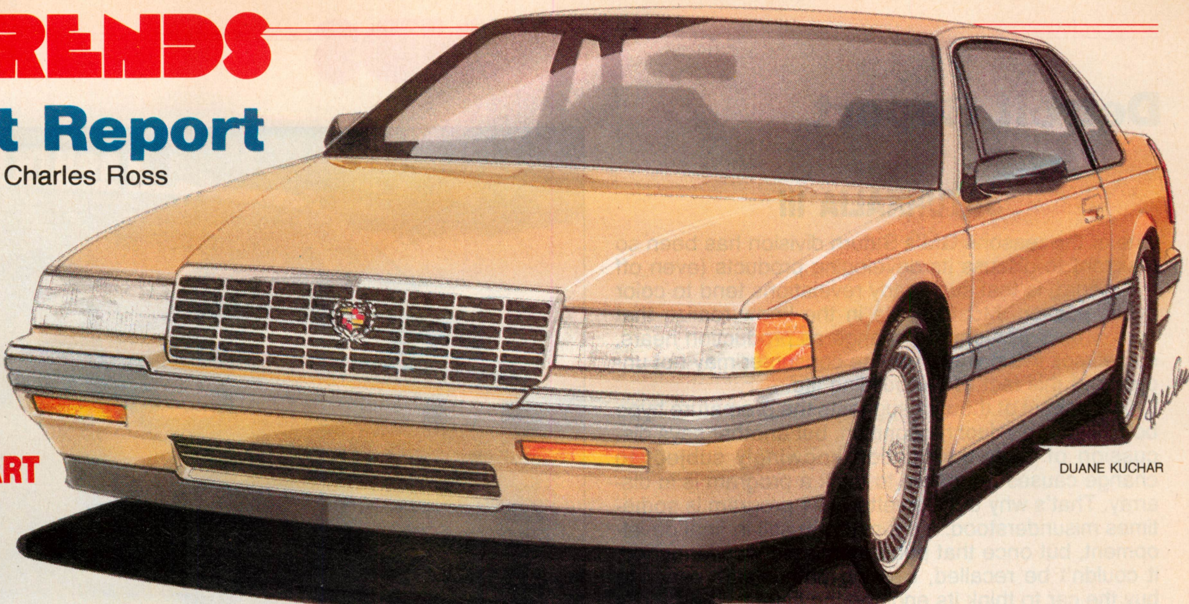
Mercedes will also officially support three domestic two-car teams taking part in the German Touring Car Championship. Leaving nothing to chance, the firm has already completed production of an Evolution version of the 190E 2.5-16, and the 500 cars destined for European markets are equipped with Getrag 6-speed gearboxes, twin-plate clutches, limited-slip differentials, wider wheels and flared arches, and improved aerodynamics. In race trim, all six "factory" cars will develop 316 hp from the 2.5-liter engine, against 300 hp for the 2.3, a gain of 5%, while torque is improved by nearly 6% to 210 lb-ft at 7000 rpm. —*Michael Cotton*



TRENDS

Detroit Report

Edited by Daniel Charles Ross

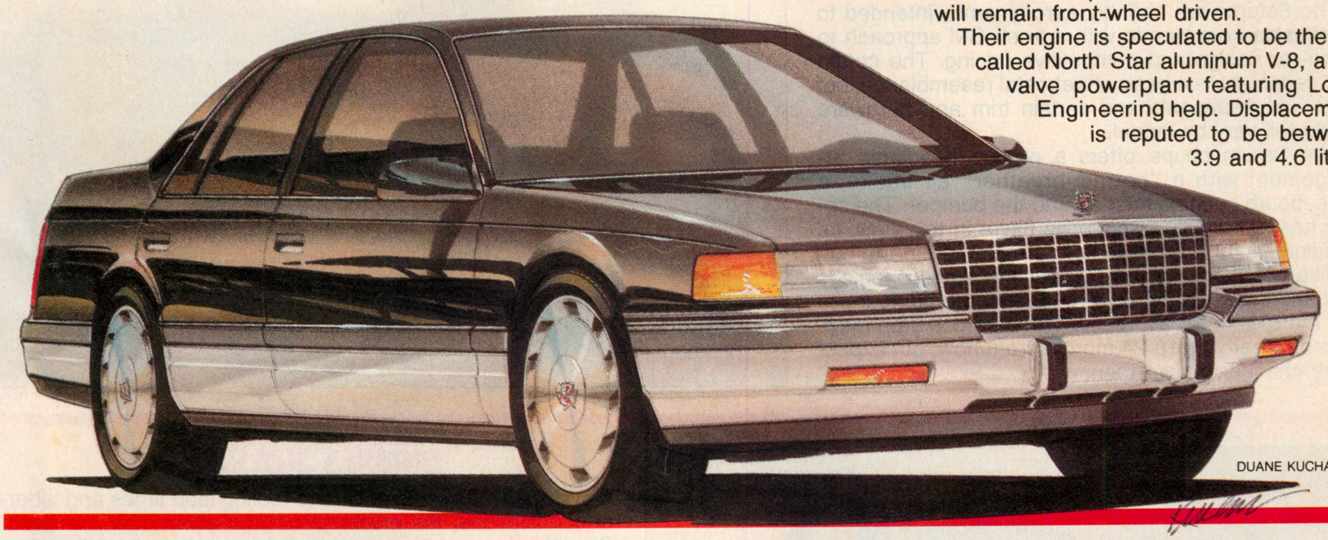

DUANE KUCHAR

ALL-NEW CADDYS IMPART SHOW-CAR THEMES

There are more changes going on in the Cadillac skunk works than wily division General Manager John O. Grettenberger will own up to, so here are his two prospects for 1993, the Eldorado and Seville. Cadillac fans (and they are legion) will see several resemblances here to the Voyage show car of last year and the so-called "Son of Voyage," the Solitaire, making the auto show circuit now.

The 2-door Eldorado E-body and the 4-door Seville K-body will combine with the De Ville's C-body chassis by '92. The hybrid will incorporate elements of the E, K, and C, though the surviving designator will probably be C. The new C-chassis will reportedly be about 3 in. longer than the 113.8-in. wheelbase of today's C-Caddys. At a wheelbase of about 117 in., the Eldo/Seville will be up almost a full 9 in. The cars will remain front-wheel driven.

Their engine is speculated to be the so-called North Star aluminum V-8, a 32-valve powerplant featuring Lotus Engineering help. Displacement is reputed to be between 3.9 and 4.6 liters.


DUANE KUCHAR

CHRYSLER IMPERIAL DEBUTS THIS FALL

Chrysler sources confirm the venerable Imperial badge will return in the 1990 model year. The car being created from the front-drive C-body New Yorker will be tagged the Y-body and be available in both Imperial and Fifth Avenue models.

The power pack is expected to be Chrysler's new electronically fuel-injected 3.3-liter V-6 of about 150 hp with the Ultradrive electronic 4-speed auto-shifter. Other equipment reportedly includes anti-lock brakes and air springs with electronic ride control.

Chrysler will tout the Y-body's "new, longer look," but a look isn't all it is. The wheelbase change in the works for the Imperial stretches 5 in. longer to about 109 in., pushing the bumper-to-bumper measurement to 198.5 in. Part of the newfound length comes from the sleight-of-hand method—by elongating the Imperial's tail with an endcap and providing a fresh taillamp execution. The front end will offer a vertical-bar "waterfall" grille in chrome, with headlamps hidden behind doors in the previous Imperial style.

Another famous badge, the Chrysler Town & Country, returns this fall affixed to a long-wheelbase "woody" spinoff of the T-115 minivans. The concept was displayed at the auto show in Detroit last January.

Detroit Report

SATURNALIA III

One of the reasons GM's Saturn division has been so reluctant to discuss its developing products (even off the record) is that such early revelations tend to color public opinion. Most people in the know realize that cars in development will change as production nears, sometimes in big ways, but the consumer may not understand this fact of car-building life.

One school of thought suggests the premature hype boosts later product recognition, but another says discussion of early information knowingly subject to change causes the public to think a program is in disarray. That's why the Corvette ZR-1 program is sometimes misunderstood. It's a platform still in final development, but once that publicity missile was launched, it couldn't be recalled, causing enthusiasts eager to buy the car to think its engineering is late. The ZR-1's engineering isn't late; the publicity was early.

Saturn officials have learned this no-car-before-its-time lesson, though prototypes must eventually be driven on the streets in order to separate reality from realism. These surveillance photos of the Saturn coupe and sedan show that platform completion isn't too far away. They were snapped near GM's cold-weather test retreat in Canada.

The Saturns are stylishly aerodynamic, intended to steal sales from Honda with a fresh GM approach to small-car design and competitive pricing. The coupe and sedan share a basic sheetmetal resemblance, but front end treatments and certain trim and hardware levels will vary by model.

The Saturn coupe offers a pop-up headlamp arrangement with a "bottom-breather" air intake, a wide-mouth opening molded into the bumper. The sedan has a distinctly Oldsmobile flavor in this view. Its headlamps and turn indicators are planted in the bullet-like nose, and in the bumper are small openings port and starboard for cooling. Below the bumper are two more slots for air intake. The cars could be introduced as early as 18-24 months from now, but expect more changes before then.

HANS LEHMANN/HIDDEN IMAGE

BARRY PENFOUND

GM TO BUILD LWB M-VAN

General Motors will stretch the wheelbase and overall length of its M-van this fall. Long-wheelbase versions of GMC Safari and Chevrolet Astro will be popular with the van conversion crowd looking for some glitter in a moribund recreational vehicle market.

In related news, GMC Vandura and Rally models and the Chevrolet Sportvan will be introduced in 1990 in extended-length versions. The new vans are intended primarily to service short-range school bus, airport limo, and hotel shuttle vehicle niches.

BRIEFLY NOTED

North Star Dimming: Due to tooling lead times and federal certifications, the much-speculated-about 32-valve North Star aluminum V-8 engine can't be ready before the 1993 model year. GM planners are said to be hot for an all-new car to put it in then . . . **But Elmer's Isn't a Supplier:** Ford is testing a single Taurus sedan assembled almost exclusively with adhesives and mechanical bonding. Eliminating welds promotes high-quality finishing and decreases corrosion potential . . . **This Is Fast?** Chrysler sources bemoan the quick turnaround needed for the weathered styling of full-size pickups, but complain that the all-new T-300 redesigns can't be ready until 1993. Derivatives include a new Dodge Ramcharger sport/ute and a full-size Ram Van . . . **Motorvations:** Chrysler is preparing a 24-valve version of this fall's 12-valve 3.3-liter V-6, and the company's 3-liter turbo should be available by the 1992 model year . . . **Rumor Control:** An unconfirmed report said the Eagle Premier will go to the Chrysler division . . . **Testing, 1-2-3:** Ford will test plastic cargo boxes on thousands of Ranger pickups. If deemed successful, the boxes will be planned for the PN38 program to fully redesign the Ranger for 1993 . . . **Dealers Up:** A trade journal said the number of auto dealerships in the U.S. rose by 165 in 1988 to 25,105, but Chrysler was the only U.S. maker to gain . . . **Berettas Won't Be Held Up:** GM agreed to pay handgun maker Beretta $500,000 and legal fees for the use of the Beretta name on its L-body coupe. The money will be donated to the Beretta Foundation for Cancer Research.

PEOPLE WRITE TO PENNZOIL®

Straight answers from the automotive experts.

Two-Cycle Homework

Q. I am a student doing a consumer report for my chemistry class. I would like to know the chemical difference between water-cooled, and air-cooled two-cycle engine lubricants.

C.G., Providence, NC

A. Oils designed for water-cooled two-cycle engines, such as Pennzoil® Premium Outboard 2-Cycle Oil, contain additives called ashless dispersants. These additives are free of metallic ash compounds. High-quality outboard oils are labelled NMMA TC-W II™.

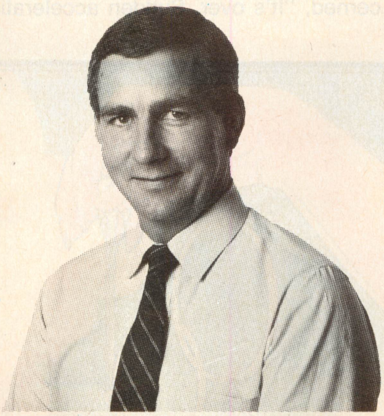
On the other hand, Pennzoil® 2-Cycle Oil for Air-Cooled Engines, is properly formulated for air-cooled application, and contains calcium detergents. This type of oil is referred to as "low ash oil" in many owner's manuals.

Due to the different operating temperatures and conditions of water-cooled and air-cooled two-cycle engines, different additives are required for maximum engine protection.

Now, Voyager

Q. I have an '88 Plymouth Voyager with a V-6 engine, which now has 8300 miles on it. Recently, when changing my oil, I found a thick, white deposit on the filler cap, and inside the valve cover. The oil looked normal. Can you explain what happened?

F.W., Burlington, IA



By Don Johnson

Vice President, Product Engineering
Pennzoil Products Company

A. The white deposit is an emulsion, caused by moisture accumulation in the cooler areas of your engine. This can be caused by excessive short trip driving, a thermostat which is stuck open, or a plugged PCV valve. If none of these appear to be the cause, arrange for a qualified mechanic to check for a coolant leak.

Detergents In Pennzoil

Q. I'm writing to ask about your 10W-30 and 10W-40 motor oils. Do these oils contain detergents? There's no mention of detergents on the bottles.

M.H., Williamston, SC

A. Yes. They both contain detergent additives. All Pennzoil Motor Oils exceed the highest performance levels, as established by the American Petroleum Institute (API).

Racing Oil For A Regular Car

Q. Do you think for normal driving, a racing oil would be beneficial, and worth the added expense?

E.D., Perryville, MO

A. No. I don't believe that it would be beneficial for you to switch to a racing oil for your vehicle. Racing oils are designed for the lubrication of high-performance competition engines. Many contain special additives that make the oil compatible with a variety of competition fuels such as methanol and nitromethane.

EDITOR'S COMMENT

Selecting the proper two-cycle oil is a critical factor in maximizing engine life. Using an oil designed for air-cooled engines in an outboard (water-cooled) engine, can result in spark plug fouling, port plugging and piston seizure. Using an outboard oil in an air-cooled engine can cause piston ring sticking in heavy duty service. No single oil can do it all. So be sure to follow the engine manufacturer's recommendation, and use the proper oil in each application.

WE'RE OPEN TO QUESTIONS *about motor oils, lubricants and engines. However, you can tell us a few things, too. Maybe you've discovered something about motor oils or lubricants. Or you have a special reason for being a Pennzoil fan. We would like to hear from you. Write to: Don Johnson, Pennzoil Products Company, P.O. Box 2967, Houston, TX 77252-2967.*

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Washington Report

Edited by Ted Orme

NHTSA BLAMES SUDDEN ACCELERATION ON "PEDAL MISAPPLICATION"

Following an exhaustive, year-long study of sudden acceleration, the National Highway Traffic Safety Administration has concluded that the most likely cause of this strangest of all automotive phenomenon is "pedal misapplications that may be aggravated by vehicle design." NHTSA chose kinder, gentler terminology than Transport Canada, which came straight out and blamed sudden acceleration on driver error.

"Driver error may imply carelessness or willfulness in failing to operate a car properly," NHTSA gingerly explained. "Pedal misapplication is more descriptive of what occurs. It could happen to even the most attentive driver who inadvertently selects the wrong pedal and continues to do so unwittingly."

Additionally, NHTSA said that factors such as pedal location, shape and feel, and unexpected fast idle or engine surging may play a role in pedal misapplication. But agency data also indicate a strong relationship between sudden acceleration complaints and the driver's familiarity with the vehicle and, to a lesser extent, an over-involvement of older and/or female drivers. Publicity has also been shown to increase complaints of sudden acceleration, or perceived sudden acceleration.

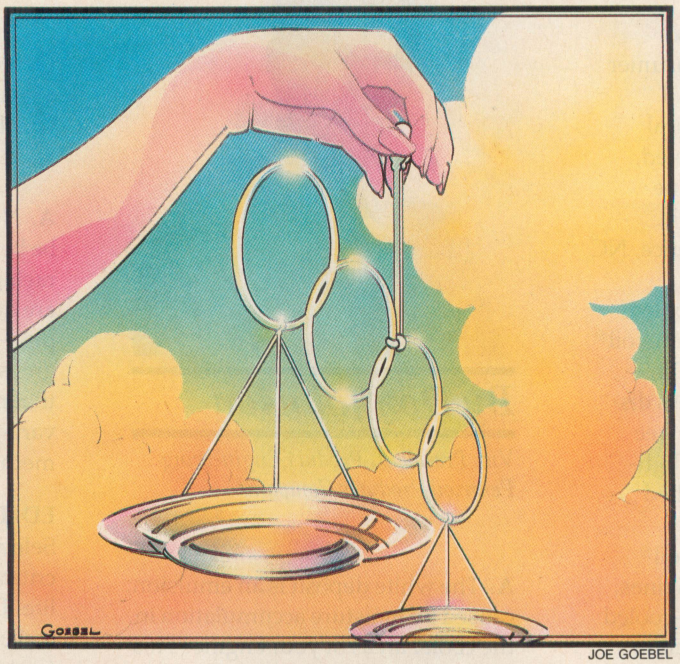
However, the study, conducted for NHTSA by Department of Transportation's Transportation Systems Center in Cambridge, Massachusetts, could find no mechanical or electrical cause for reported incidents of unintended full power acceleration from a standstill that cannot be controlled by braking.

A "substantial" number of vehicle malfunctions were found that caused "unwanted and substantial power output," but the "vast majority" of these malfunctions were garden-variety mechanical problems such as broken or ill-fitting parts in the throttle assembly or accelerator linkage, which were easily detected, caused only partial throttle sticking, and were always controlled by the brakes.

Despite the fact that the report still assigns some blame for the problem on vehicle design, Audi of North America, which has seen sales of its 5000S models plummet by two thirds because of adverse publicity, greeted the report as "a breath of fresh air." Audi spokesman Joe Bennett admitted the report "won't stop the lawsuits, but it doesn't give any comfort to those who claimed mysterious defects, either."

To its credit, CBS-TV's "60-Minutes," which started Audi's swan dive two years ago with a one-sided account of sudden acceleration called "Out of Control," offered a balanced update of NHTSA's newest findings on its March 12 show. There was no apology made for the original show.

Overall, Bennett said, "We are delighted with the findings of the study. We are not surprised because we didn't believe that it could have resulted in any other kind of finding. It's like a great weight has been lifted, and now we can get on with rebuilding the franchise." As far as Bennett is concerned, "It's over. Sudden acceleration is now in the category of ancient history."



JOE GOEBEL

Not according to Clarence Ditlow, head of the Center for Auto Safety, which has spearheaded charges of sudden acceleration. "It ain't over 'til it's over," said Ditlow, "and this report certainly isn't the end of the answer to sudden acceleration." Ditlow contends that the NHTSA study supports vehicle error more than driver error, "because it shows that you can achieve wide-open throttle with cruise control failure. And, as we have said all along, once you have wide-open throttle, the stopping distance is anywhere from 70 to 120 feet. And that's fully consistent with the accidents that have been happening in driveways and parking lots."

Sudden acceleration is now in the category of ancient history

A few verified instances of cruise control failure leading to wide-open throttle were reported, but they occurred when the vehicle was already traveling at considerable speed and their causes were readily detected in post-incident investigations. In fact, cruise control systems tested under all kinds of stress—temperature extremes, power supply variations, high voltage discharges, and electromagnetic and radio frequency interference—"demonstrated no failure modes of any relevance to SAI (sudden acceleration incidents)," according to the study. And the only susceptibility of cruise control systems to electromagnetic and radio frequency interference resulted in shutting them off.

George Parker, head of NHTSA's defect investigation unit, also pointed out that applying the brakes activates two separate devices that disconnect the cruise control, and no defects were found in these devices. Furthermore, he noted that many of the cars involved in the study were not even equipped with cruise control, "yet they had the same rates of sudden acceleration incidents," and "half of the incidents occurred in reverse, and most cruise control systems don't work in reverse." Parker defended the study as "comprehensive and scientific," and added sarcastically, "Ask Clarence to throw his study on the table."

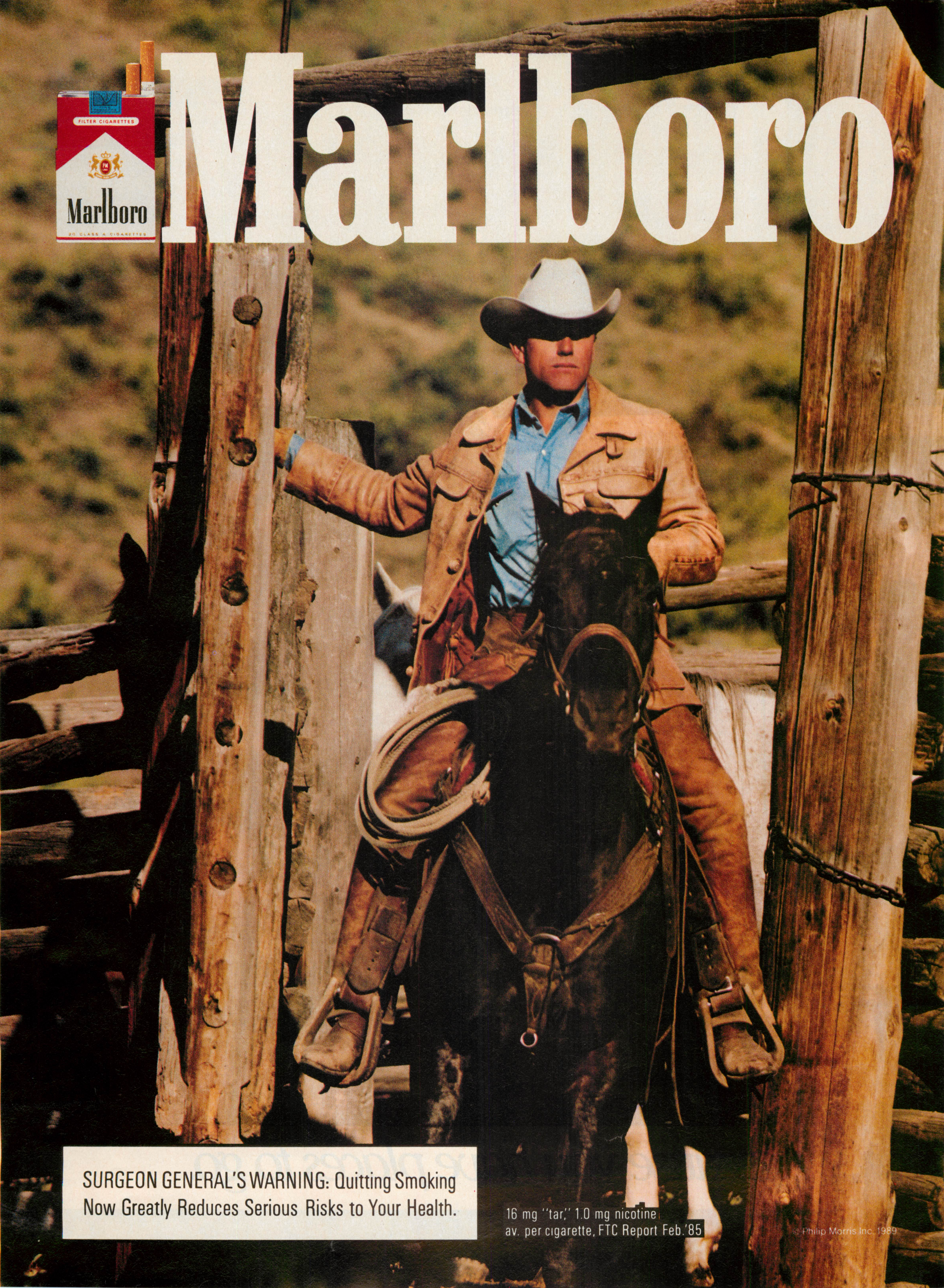
The study also shot down theories that full-throttle sudden acceleration could be caused by malfunctions in electronic idle speed controls, computer-controlled fuel-injection systems, or vacuum-hose and other leaks that increase the flow of air into the intake manifold.

In addition, no evidence was found that defects in the automatic transmission could produce sudden acceleration, and no problems with the brakes were found. Researchers could not document one case of a car accelerating rapidly or uncontrollably while the brakes were applied with reasonable force.

NHTSA admits that a pedal misapplication conclusion "may be difficult to accept by those who sincerely believe they were applying the brake at the time they experienced a sudden-acceleration incident." But the report explains that when the brain becomes overloaded, as in an out-of-control situation, "it simply assumes the muscles are performing as desired and ignores or misinterprets the feedback provided by the vehicle's movement."

The study also blamed a small number of cases on "retrograde amnesia" resulting from concussions suffered in accidents, and from "subconscious memory alteration in defense of ego."

To reduce pedal misapplication, the study recommended moving the pedals farther apart laterally and raising the brake pedal with respect to the accelerator to make the pedals more distinguishable. But as George Parker pointed out, "You have to be careful you don't cure one problem and create another. If you move the pedals farther apart, then you lengthen brake reaction time." *continued on page 38*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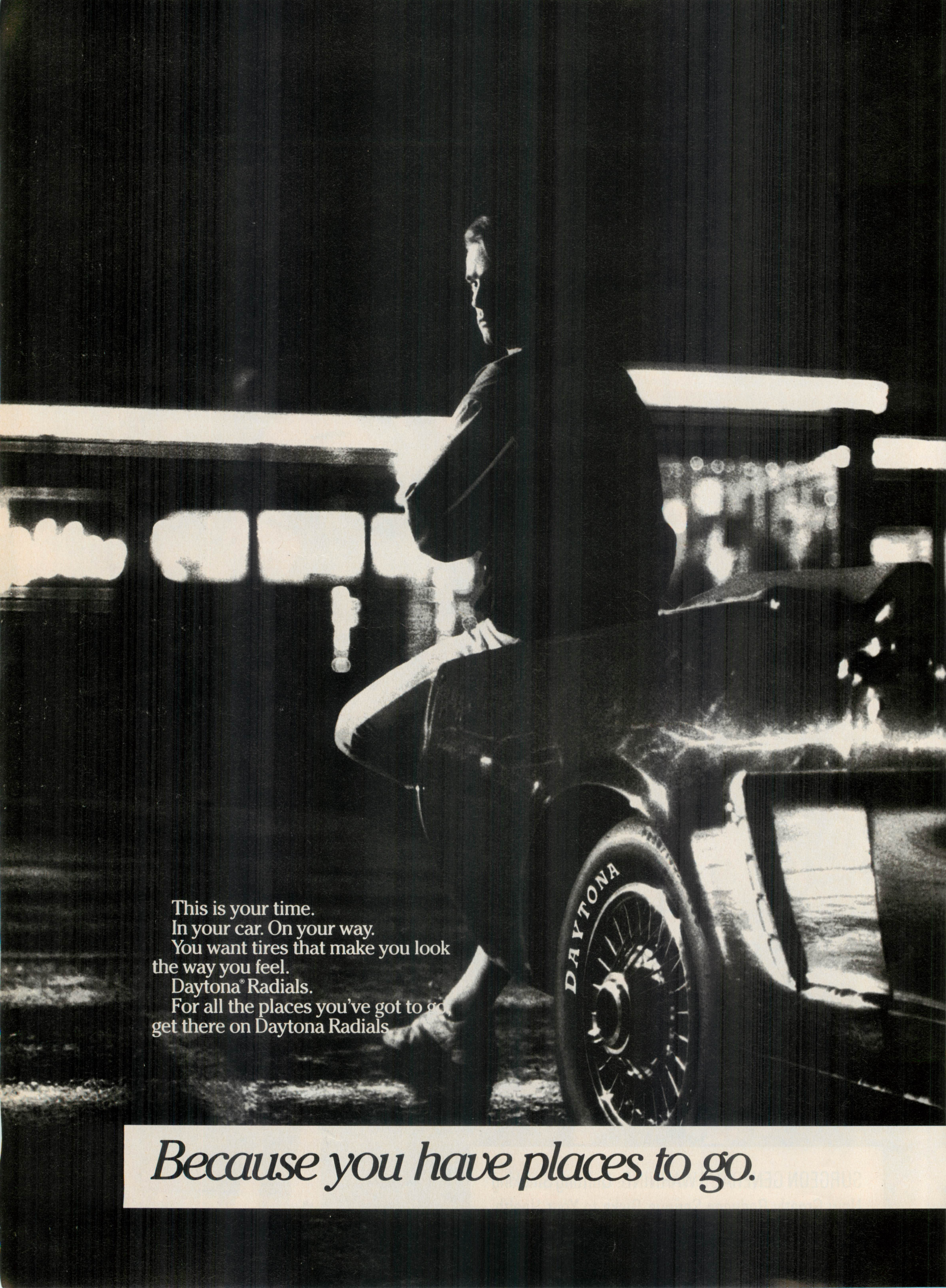
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Acura Legend Sedan LS	5/88	7.91	16.27	86.8	149	.79	19
Audi 80	8/88	10.91	17.97	78.9	154	.81	22
BMW M3	12/87	8.10	16.07	88.3	130	.82	23
BMW M6	4/88	6.96	15.45	94.5	126	.83	15
BMW 535i	4/89	9.06	16.85	87.6	133	.81	15
BMW 735i	7/87	9.00	16.89	85.8	129	.83	14
BMW 750iL	6/88	7.63	15.76	93.3	132	.81	12
Buick Reatta	2/88	9.34	17.13	83.2	149	.83	19
Buick Regal GS	9/88	10.63	17.87	78.1	139	.86	20
Buick Riviera *T-Type*	3/87	9.81	17.37	79.4	139	.81	19
Cadillac Allanté	2/89	8.25	16.40	84.3	134	.83	15
Cadillac Eldorado	12/87	10.02	17.54	79.3	147	.81	17
Cadillac Seville STS	8/88	9.95	17.53	79.2	145	.81	17
Chevrolet Beretta GT	1/87	9.41	16.95	82.0	139	.80	19
Chevrolet Camaro IROC-Z	1/88	6.95	15.54	91.7	156	.89	16
Chevrolet Cavalier Z24 Convertible	5/88	9.26	16.96	82.2	144	.84	20
Chevrolet Corsica LTZ	4/89	9.34	17.19	78.2	143	.83	18
Chevrolet Corvette Coupe	5/89	6.47	15.02	94.6	127	.86	16
Chevrolet Twin Cam 16V Nova	2/88	10.30	17.64	79.7	136	.79	25
Chrysler LeBaron Convertible	11/87	9.81	17.52	79.6	167	.80	25
Chrysler New Yorker	8/88	10.91	18.17	79.0	149	.71	19
Chrysler's TC by Maserati	4/89	7.49	15.93	92.4	137	.78	21
Daihatsu Charade	1/88	14.00	19.94	69.1	156	.76	38
Dodge Daytona Turbo Z	8/87	8.05	16.08	86.7	140	.83	21
Ferrari Testarossa	5/89	4.70	14.49	100.7	156	.88	10
Ford Mustang GT	1/88	7.23	15.77	92.8	165	.80	16
Ford Probe GT Turbo	3/88	7.90	16.13	87.4	136	.84	24
Ford Tempo All Wheel Drive	3/87	15.34	20.25	68.6	146	.81	22
Ford Thunderbird Turbo Coupe	8/87	8.59	16.48	85.1	134	.82	18
GMC S15 Jimmy	8/88	9.82	17.51	78.6	150	.71	17
Honda Accord LXi Coupe	6/88	10.02	17.55	79.4	140	.82	25
Honda Civic Si	1/87	10.57	17.82	78.7	147	.78	33
Honda CRX Si	2/88	8.59	16.57	85.0	141	.83	29
Honda Prelude Si 4ws	8/87	9.88	17.39	81.3	132	.86	23
Hyundai Excel GS	12/88	14.93	20.08	68.7	167	.74	28
Isuzu I-Mark RS	1/89	9.47	17.19	82.9	125	.79	28
Isuzu Impulse Turbo	2/88	9.61	16.93	86.3	149	.86	21
Jaguar XJ6	5/89	9.95	17.50	84.7	128	.74	19
Lincoln Mark VII LSC	8/88	7.91	16.22	89.8	138	.78	17
Lotus Esprit Turbo	2/88	5.80	14.36	95.3	130	.89	23
Mazda MX-6 4WS	4/89	7.43	15.70	91.2	130	.87	21
Mazda RX-7 Turbo II	9/87	6.69	15.49	83.9	136	.89	17
Mazda 323 GTX	3/89	8.66	16.48	84.6	150	.80	21
Mazda 626 4WS	8/88	7.91	16.32	85.7	134	.80	19
Mercedes-Benz 260E	11/88	9.61	17.40	82.6	135	.79	20
Mercury Cougar XR7	1/89	8.31	16.45	87.8	130	.83	17
Mercury Tracer	8/87	11.93	18.52	74.2	154	.73	28
Merkur Scorpio	6/88	10.15	17.53	80.1	123	.80	17
Mitsubishi Eclipse GS Turbo	12/88	7.43	15.87	90.3	145	.84	22
Mitsubishi Galant	12/88	10.43	17.64	79.4	138	.80	21
Mitsubishi Mirage Turbo	8/88	8.18	16.45	84.5	138	.81	25
Mitsubishi Montero 4-dr. LS	11/88	12.34	18.95	72.9	148	.71	17
Nissan Axxess	4/89	10.91	17.89	76.0	133	.72	20
Nissan Maxima GXE	1/88	10.29	17.82	78.2	153	.81	18
Nissan Pulsar NX SE SportBak	5/88	9.34	17.02	81.8	138	.85	23
Nissan 200SX SE	7/87	9.82	17.20	81.8	137	.80	23
Nissan 240SX SE	8/88	9.95	17.32	82.4	147	.86	23
Nissan 300ZX Turbo	6/87	7.91	15.77	88.6	144	.79	17
Oldsmobile Calais GT Quad 4	8/87	9.19	16.97	81.0	143	.84	25
Oldsmobile Cutlass Calais Intl.	3/89	7.50	16.00	90.5	153	.83	24
Oldsmobile Delta 88	4/87	10.40	17.83	76.9	149	.81	19
Oldsmobile Trofeo	11/88	10.34	18.00	78.2	117	.83	19
Peugeot 405 Mi 16	11/88	10.43	17.69	81.5	133	.86	20
Plymouth Acclaim LX	5/89	9.88	17.57	80.3	135	.79	18
Plymouth Laser RS Turbo	12/88	7.49	15.88	90.6	144	.84	22
Pontiac Bonneville	4/88	10.09	17.47	79.8	137	.81	19
Pontiac Fiero GT	3/88	8.72	16.44	81.9	141	.84	17
Pontiac Firebird Formula	1/88	7.50	15.95	88.5	153	.89	16
Pontiac Grand Am SE Turbo	8/87	8.80	16.73	75.8	134	.83	20
Pontiac LeMans	8/87	13.43	19.25	71.7	174	.75	31
Pontiac Trans Am GTA	7/88	7.38	15.88	90.0	141	.87	16
Pontiac 20th-Anniv. Trans Am	3/89	5.40	14.18	95.8	142	.84	
Porsche 911 Cabriolet	11/88	7.36	15.77	92.7	142	.87	18
Porsche 928S 4	4/88	6.10	14.43	102.4	130	.87	15
Porsche 944 Turbo S	5/88	6.57	15.10	97.4	124	.87	25
Saab 900 Turbo Convertible	1/87	8.65	16.54	85.8	138	.79	21
Saab 9000 CD Turbo	2/89	9.06	16.89	81.7	134	.79	20
Sterling 827SLi	5/89	9.41	17.28	84.4	138	.77	18
Subaru XT6 Coupe	4/88	9.10	16.91	82.1	161	.74	20
Toyota Camry All-Trac	8/88	11.52	18.28	76.4	149	.78	22
Toyota Camry LE	5/87	11.32	18.39	76.4	152	.74	25
Toyota Corolla GT-S	12/87	10.64	17.81	78.9	139	.82	25
Toyota MR2 Supercharged	12/88	7.84	15.77	87.4	146	.86	24
Volkswagen Fox Wagon	2/88	11.70	18.40	73.9	133	.81	25
Volkswagen Golf GT	8/88	10.90	17.95	77.4	141	.84	25
Volkswagen Jetta GLI 16V	1/88	10.23	17.53	81.2	150	.83	22
Yugo GVX	12/88	13.56	19.38	70.8	162	.71	29

Washington Report

"PEDAL MISAPPLICATION"

continued from page 34

The report also recommended installing automatic shift locks that require the driver to apply the brakes before putting the car in motion. Audi installed shift locks on all its cars beginning with a recall in 1986, and since then many manufacturers have adopted or are considering the design. NHTSA reports sudden acceleration complaints have been "lowered significantly" with shift-lock devices.

It is hoped a combination of the shift lock, improvements and recalls already made to remedy engine surging and pedal placement problems, and the NHTSA and Transport Canada studies will make drivers think twice before charging that their runaway cars were possessed by demons.

In the meantime, NHTSA will continue to try to solve the mystery of why some models, like the Acura Legend sedan, have much higher sudden acceleration, or perceived sudden acceleration, incidents than other models, like the nearly mechanically identical Legend coupe. And the never-say-die Clarence Ditlow will continue to "ask for investigations and recalls for vehicles with high sudden acceleration rates."

THE RATING GAME

You can't believe it. You haven't had an accident in 20 years, yet your insurance company jacked up your rates for one lousy speeding ticket. That's because a good driving record is just one of many variables used to determine insurance premiums, according to Robert G. Brakey, senior vice-president for the United Services Automobile Association (USAA), the nation's sixth largest insurer of private vehicles.

Testifying before a House subcommittee investigating auto insurance rates, Brakey said those variables include: the territory where the car is located; use of the car; age, sex, and marital status of youthful drivers; annual mileage driven; driver training credit and good student discount for youthful drivers; multi-car discounts; damageability of the vehicle and the car's safety features.

As much as insurance companies value the driving record as one of the indicators of future losses, "our records show that 75% of the people who have an at-fault accident in a given year had a clean driving record for the past three years," Brakey said. He added that, "It is common in the industry to increase premiums after a negligent accident since drivers with a record of past accidents are more likely to have future accidents." Some companies, such as USAA, also charge for traffic violations, he noted. "By surcharging those with accidents or tickets substantial amounts, it enables us to reallocate our total premium and therefore reduce rates for clean drivers by about 8%," Brakey said.

TRENDS

GAS TAX FIGHT HEATS UP

Despite "read my lips" campaign pledges not to raise taxes, most auto company lobbyists and political scene prognosticators we have talked to in Washington are predicting an increase in the federal gas tax by year's end.

Some brutish members of Congress are advocating increases as high a $1/gal, but *the most mentioned* increases are a $5 a barrel import tax on oil combined with a 10¢/gal increase on gasoline, which currently carries a 9¢/gal federal tax. That would add up to about a 15¢ increase per gallon, or an estimated $15 to $20 billion windfall for the needy U.S. Treasury.

But proponents of higher gas taxes will be going against the considerable grass-roots and organizational strength of FUEL—Fuel Users for Equitable Laws—a newly formed coalition of more than 600 travel-dependent public and private organizations that believe fuel taxes should be used only for highway maintenance and improvement. FUEL has pledged to fight any attempt to "balance the budget at the gas pump," and it points to a recent survey that showed 190 members of the House and Senate who feel the same way.

Domestic auto companies are split on the issue. Chrysler supports a gas tax increase as a way of reducing fuel consumption and corporate fuel economy problems, lessening our dependence on foreign oil and bringing American gas prices more in line with the rest of the world. General Motors opposes a gas tax hike as a regressive measure that would put the heaviest burden on rural and poor motorists. GM says a 15¢ increase in the gas tax would cut vehicle output by about 500,000 units a year and put 120,000 auto industry and related workers out of a job. Ford favors a value-added tax on consumer products as a less regressive way to cut the federal deficit.

In addition to proposed federal gas tax increases, the Highway Users Federation points out that 35 states this *year* are also expected to consider raising motor fuel taxes to meet surging highway travel volumes. Last year, 17 states raised motor-fuel taxes. According to the Federation, these currently average 15¢/gal, up a heady 43% from their 1980 levels.

State gas taxes currently range from a low of 7.5¢ in Georgia to a high of 20.9¢ in Wisconsin.

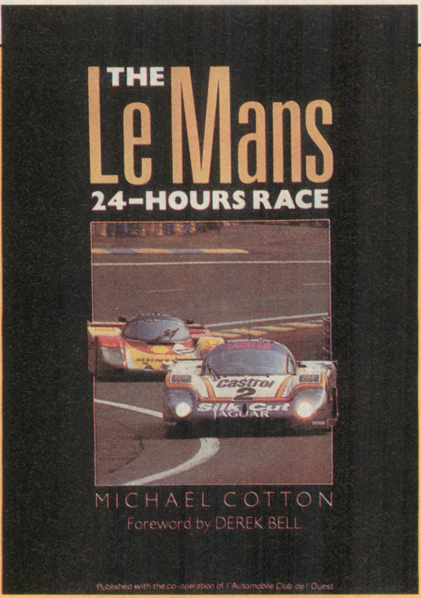
QUALITY OR PROFIT GAINS

Every year the Department of Labor takes a close look at auto price increases—estimated at an average of $559.35 for '89 models—and tries to determine how much of that is attributable to actual quality improvements. This year the figure is $189.89 retail cost for improvements such as new passive restraints, higher levels of standard equipment, changes in powertrains, and added corrosion protection. Where did the other $369.46 go? Go figure.

BOOK REVIEW

***The LeMans 24 Hour Race*, by Michael Cotton. Published by Patrick Stephens Ltd., 1989. Hardbound; 7½x10; 152 pages; 115 black-and-white, 12 color photos; ISBN: 1-85260-091-8; Distributed by Motorbooks International; 800/826-6600; $22.50.**

Ah, LeMans. The glory, the agony, the sleepy eyes behind the wheel at 4 a.m. While it's bad taste to quibble about which is the greatest motor race on earth, LeMans must be included in any discussion thereof. Yet, whether the driving is good or mediocre any given year, the race is always, as Michael Cotton says in his introduction, "...a place for excitement and passion, but also for sightseeing, campfires, barbecues, tiredness and cold. It is never less than an experience!"



In *The LeMans 24 Hour Race*, Cotton delivers a compact and complete history of that legendary sports car enduro. Granted, he does so from an unashamedly British perspective, but we must forgive him a certain reasonable chauvinism, since the Jaguar victory in 1988 that ends the book was the first win for a British marque at the Sarthe circuit since Carroll Shelby brought home the kippers in 1959, driving an Aston Martin DBR1.

The story of LeMans as it emerges in this worthwhile book is one of the rise and fall of sports car makers and the brief careers of the drivers, who rode their bellowing mounts to fame and often to their doom.

Organized by decades, Cotton's book chronicles the victories of the early French cars, then the Bentleys in the '20s, the Alfas in the '30s, the Jaguars after World War Two, the Ferraris in the late '50s and early '60s, the Ford years at the end of the '60s, and the Porsche dominance during the '70s and '80s.

At the back is more data; one section listing race winners year by year and a page showing the changes in the shape of the LeMans circuit from its 17.262km form in the early '20s to the standard 13.5km length today. For the race fan, this is a welcome bonus.

For the average reader, more "atmosphere" would give a better idea about the overwhelming impact of attending a race at La Sarthe. As it is, we come to know only the competitors' side—the enormity of racing for 24 straight hours, through darkness, fog, and rain, and knowing all along that your rivals, *every one of them*, are the best in the world.

Except for the overall dry tone, this is an excellent, compact reference for the LeMans 24-hour race. It's accurate, well written, and well illustrated, too, with photos of all the important drivers and cars, except for some of the Ferraris. Since Cotton was previously PR manager for Porsche in Britain, this must be understood in context.

At its relatively low price, this volume is an excellent buy for the racing enthusiast who doesn't have a reference to LeMans already on the shelf. For those who do, it makes a handy portable argument-solver when the hour is late, the cognac pale, and the talk runs to Woolf Barnato, Moss, and Masten Gregory. *—Greg Von Dare*

EUROPEANS BRACING FOR JAPANESE INVASION

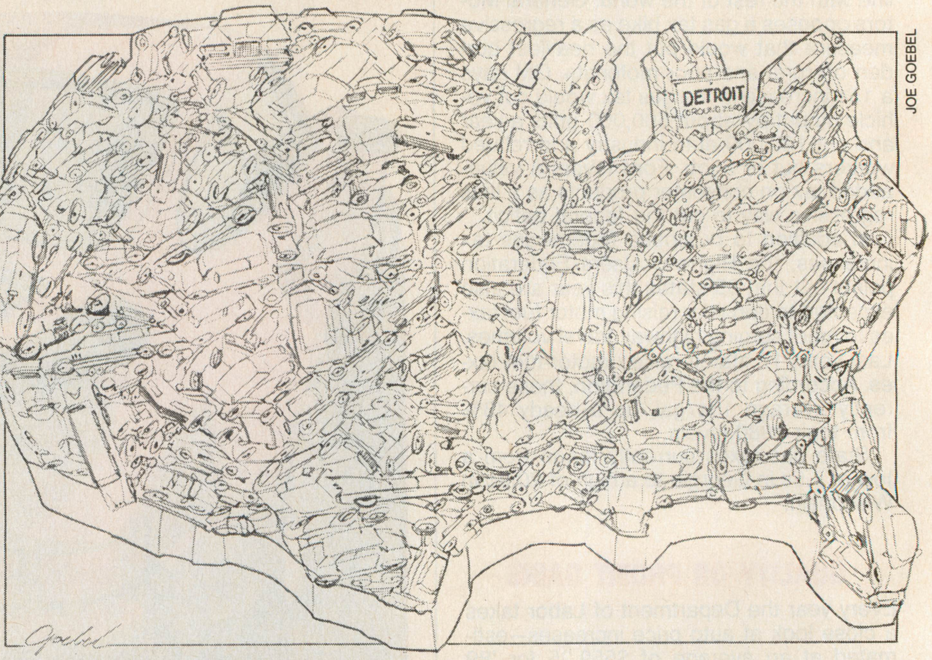
Hoping to increase market penetration while circumventing existing protectionist laws, Japanese auto makers are embarking on programs to expand their manufacturing capabilities in Europe. At present, Japanese cars account for about 11% of the total European market. But of the 1.5 million Japanese vehicles sold there last year, only about 7% were actually produced on the Continent. The European Community has yet to rule on what percentage of local content will constitute a "domestically produced" vehicle. But a new report from the respected Motor Industry Research Unit in Norwich, England, predicts that Europeans could be building 1.3 million Japanese cars per year by 1993 at factories in Belgium, Spain, and Sweden. GM of Europe President Robert Eaton has warned that the formation of the single-European market in 1992 could benefit the Japanese most, at the threat to 10 large European car assembly plants and 300,000 jobs.

1988 JAPANESE CAR SALES IN SELECTED EUROPEAN COUNTRIES

Ireland	44%
Switzerland	31
Netherlands	28
W. Germany	15
Britain	11
France	3
Italy	0.9
Spain	0.3

Source: *Automotive Industry Data Ltd.*

OVER 120 MILLION DRIVEN



JOE GOEBEL

The annual motor vehicle registration census recently completed by noted automotive statistics organization R.L. Polk & Company reveals that, as of July 1, 1988, 121.5 million passenger cars were registered in the U.S. According to Polk records, this marks the first time that figure has ever topped 120 million. Among the other facts regarding the period July 1, 1987 through June 30, 1988: New-car registrations totaled 10.4 million, down 260,000 from the previous year; the total number of cars scrapped was 8.8 million, second highest ever; and the average age of the vehicle fleet dropped for the second consecutive year, falling from 6.9 to 6.8 years.

Fortunately, it can be acquired.

The road demands. You drive. The car executes. It's easy. Better than that: it's fun.

The name is 827. Sterling 827.

Car and Driver's judgment: "The Sterling's neutral cornering behavior and smooth, sharp steering response inspired immediate confidence." No wonder.

The power: an exhilarating 160 horsepower 24-valve 2.7 liter V-6.

The guidance: double wishbone suspension up front, well located struts at the rear. ABS Anti-Lock braking. Speed proportional rack and pinion steering. Anti-sway bars front and back.

The choices: the 827SL Sedan gives you seats faced with Connolly leather, burled walnut trim, and a ten-function trip computer. The sporty 5-door 827SLi has seating panels faced with sueded pigskin, and rare rosewood trim. Both models offer an impressive array of cockpit amenities that allow you to remain cool even when the road is hot.

Plus over 160 Sterling dealers providing quality service long after the 3-year, 36,000 mile warranty has expired.

Call 1-800-622-0550 for your nearest Sterling dealer. It's the first step toward acquiring that rare automotive trait: Grace under pressure.

STERLING
MADE IN ENGLAND BY ROVER CARS

Flat-Out Fastest Ameri

Doin' the high-speed desert dance

by Ron Grable

PHOTOGRAPHY BY VIC HUBER

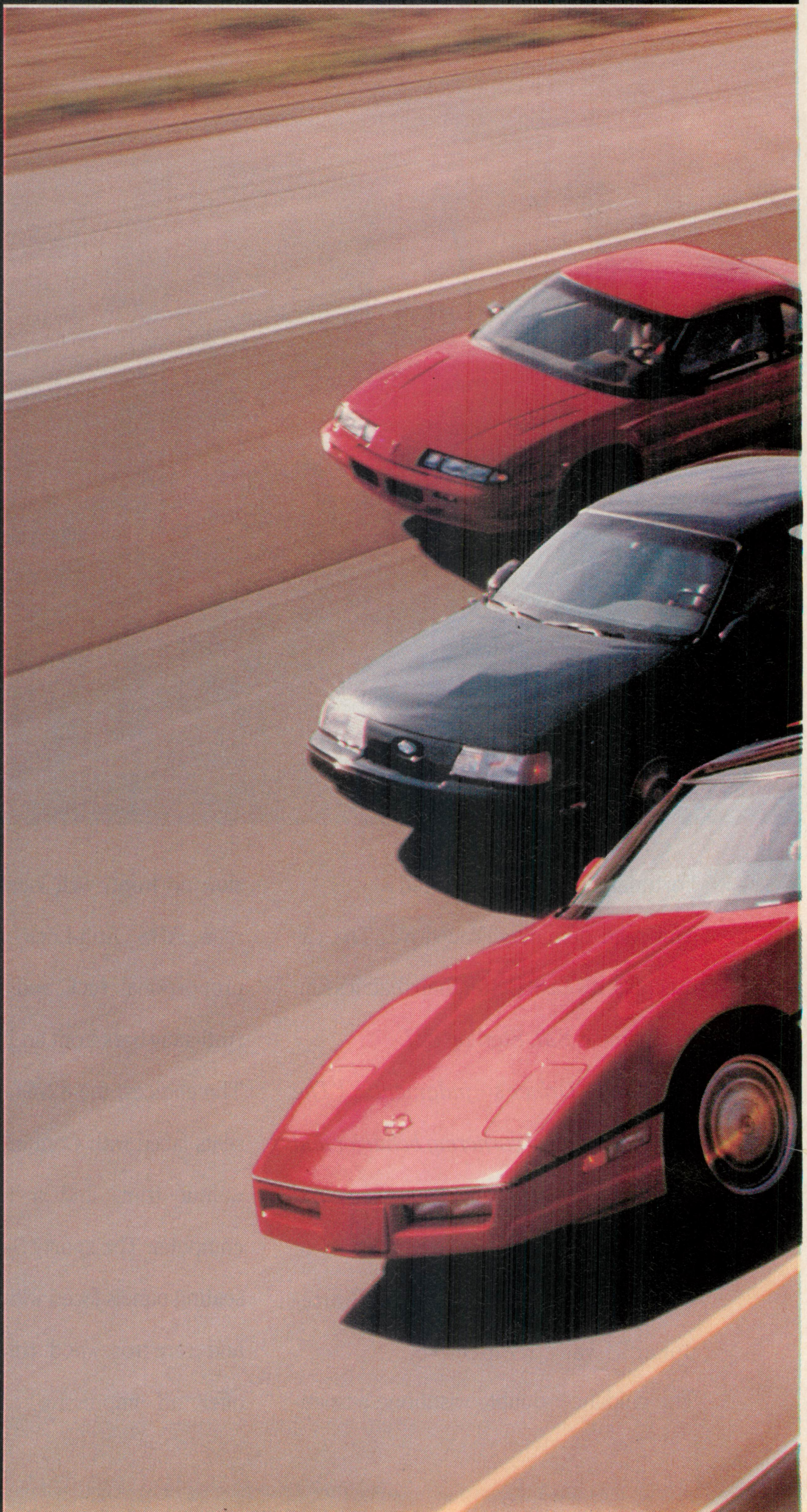
The stillness of the chilly desert morning is pierced by the sound of engines—the deep, throaty sound of big V-8s, the more muted, uneven pulsation of V-6s, and the raspy bark of small-displacement inline fours. Some exhaust notes are harsh, others muted by turbochargers.

Attendants accompany each vehicle, hovering about them protectively, ministering to them, with last-minute checks of oil, water, tire pressure. Undeniably, the cars have top billing for today's show, *making their* attendants feel vulnerable. They fidget impatiently, eager to get on with it, yet uneasy about the outcome.

This is, after all, a Top-Speed Contest. After exposure to the glaring impartiality of the radar gun, each car's true top speed will be laid bare for all to see. No more wild claims and speculation. Everyone has a story about how fast his car will go: "She was doin' 130 easy, 'n' I still had lotsa throttle left." Sure, bub.

The mystique surrounding top speed is compounded by the difficulty of finding a suitable place to go that fast. Public highways are obviously out, which effectively prevents most people from ever being able to do it. So they have to guess, estimate, and exaggerate. The radar gun doesn't allow for exaggeration.

This top-speed test was inspired by the availability of Chevrolet's much-anticipated Corvette ZR-1. Its King-of-the-Hill nickname and pre-introduction publicity set off a burning desire to see how fast it will really go. Of course, as in our previous flat-out fastest American cars story, we invited all the domestic manufacturers to submit



can Cars II, the Sequel

their fastest production cars for evaluation in this test.

We tested top speed only at the Arizona Test Center (ATC), and the manufacturers were allowed to disable any artificial speed-limiting devices, such as programming the engine control module to shut off engine fuel to limit speed to a selected value. This is sometimes done to curb a car's velocity below the maximum rated speed of its tires or to appease the Omnipotent Gods of Insurance. Otherwise, we requested box-stock, just-like-you-can-get-in-the-showroom vehicles.

We mention insurance companies because their influence continues to permeate the entire automobile industry and is affecting the way cars are designed and marketed, as well as how they may be driven. Engineers can no

longer design to technological limits; they must bow down to the insatiable demands of the insurance companies, a sad state of affairs.

The insidious insurance company plague reared its ugly head when we were lining up cars for this high-speed test. Ford declined to send any entries based on the current litigious atmosphere and the posture of the insurance community toward performance cars. Ford was also concerned that legislators would look askance at its fuel-hungry performance cars while it's asking for a favorable ruling on the CAFE requirements.

The result of Ford's decision, as far as you readers are concerned, *is that* we weren't able to top-speed test our '89 Car of the Year, the new Thunderbird SC. We partially saved the day by locating a cooperative owner of a Taurus SHO and Mustang LX, who was kind enough to let us test his

TECH DATA

Chevrolet Camaro IROC-Z

Vehicle configuration	Front engine, rear drive
Engine configuration	V-8, OHV, cast iron block and heads, liquid cooled
Displacement	5733 cc (350 cu in.)
Max. power (SAE net)	240 hp @ 4400 rpm
Max. torque (SAE net)	345 lb-ft @ 3200 rpm
Transmission	4-sp. auto.
Suspension, f/r	Independent/live axle
Brakes, f/r	Disc/disc, power assist
Tires	245/50ZR16
Tire mfr. & model	Goodyear Eagle ZR50
Overall length	4877 mm (192.0 in.)
Curb weight	1406 kg (3099 lb)
Base price	$14,145

Chevrolet Corvette

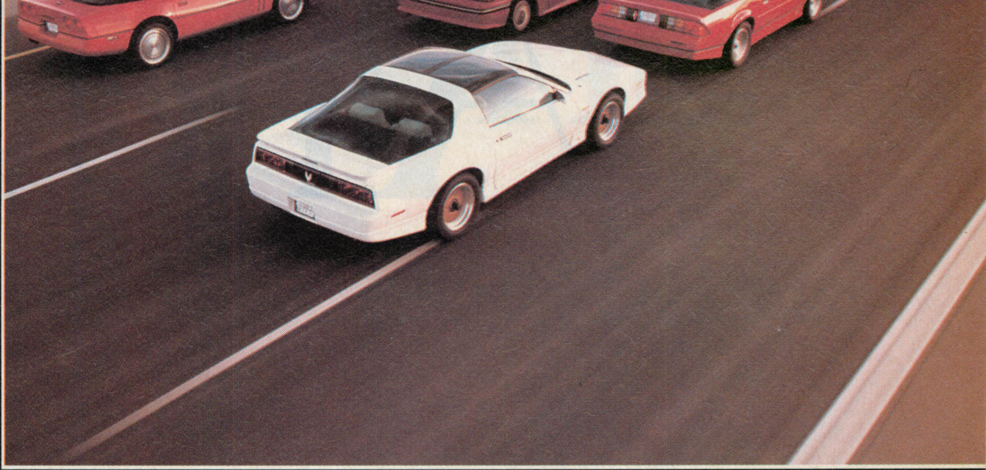
Vehicle configuration	Front engine, rear drive
Engine configuration	V-8, OHV, cast iron block, alloy heads, liquid cooled
Displacement	5733 cc (350 cu in.)
Max. power (SAE net)	245 hp @ 4300 rpm
Max. torque (SAE net)	340 lb-ft @ 3200 rpm
Transmission	6-sp. man.
Suspension, f/r	Independent/independent
Brakes, f/r	Disc/disc, power assist, anti-lock
Tires	275/40ZR17 front, 275/40ZR17 rear
Tire mfr. & model	Goodyear Eagle ZR40
Overall length	4483 mm (176.5 in.)
Curb weight	1462 kg (3223 lb)
Base price	$31,545

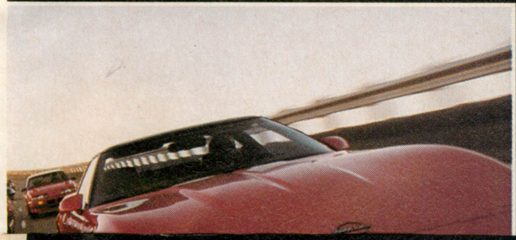
Chevrolet Corvette ZR-1

Vehicle configuration	Front engine, rear drive
Engine configuration	V-8, DOHC, cast *alloy block and heads,* liquid cooled
Displacement	5732 cc (350 cu in.)
Max. power (SAE net)	380 hp @ 6200 rpm
Max. torque (SAE net)	370 lb-ft @ 4200 rpm
Transmission	6-sp. man.
Suspension, f/r	Independent/independent
Brakes, f/r	Disc/disc, power assist, anti-lock
Tires	275/40ZR17 front, 315/35ZR17 rear
Tire mfr. & model	Goodyear Eagle ZR35
Overall length	4504 mm (177.4 in.)
Curb weight	1572 kg (3465 lb)
Base price	$55,000 (est.)

with a revised induction system and Multec fuel injectors that help the engine crank out 245 hp if equipped with the optional exhaust system. It also boasted the new ZF 6-speed manual transmission, a direct replacement for the Doug Nash 4-speed with electric overdrive.

Last, but far from least, we had our hands on a mouth-watering, in-the-flesh ZR-1 King of the Hill Corvette. If you don't know what that is, you've either just returned from four years in the Antarctic or you're brain-dead. Probably more journalistic ink has been spread on paper over this vehi-





Being closet motorcycle freaks, we were looking forward to our drive in the

well at this speed because the car had run 158 a couple weeks before at TRC in Ohio. They felt the explanation was in the cold, early morning temperatures during this test, increasing the efficiency of the intercooler, which in turn would allow the ECM

cars, so that Ford didn't go completely unrepresented.

From Plymouth, we got the new Laser, with knockout styling and a 2-liter inline four sporting 4 valves/cylinder, electronic fuel injection, turbocharging, and intercooling. This adds up to a tractable engine with close to 200 hp and over 200 lb-ft of torque hauling around a mere 2700 lb. The contemporary styling seems to get a thumbs-up from everyone, and the sporty handling dynamics complement the wonderfully flexible engine.

The Dodge entry came to us by way of Shelby's little magic factory, and it's stunningly quick. It starts life as a Dodge Shadow Turbo, but Ol' Shel' changes all that pretty quickly. He adds a different black box to control the Turbo II drivetrain (with the Variable Nozzle Turbo and intercooler) and a new reduced-restriction exhaust system. The result is 175 hon-

TECH DATA

Ford Mustang LX

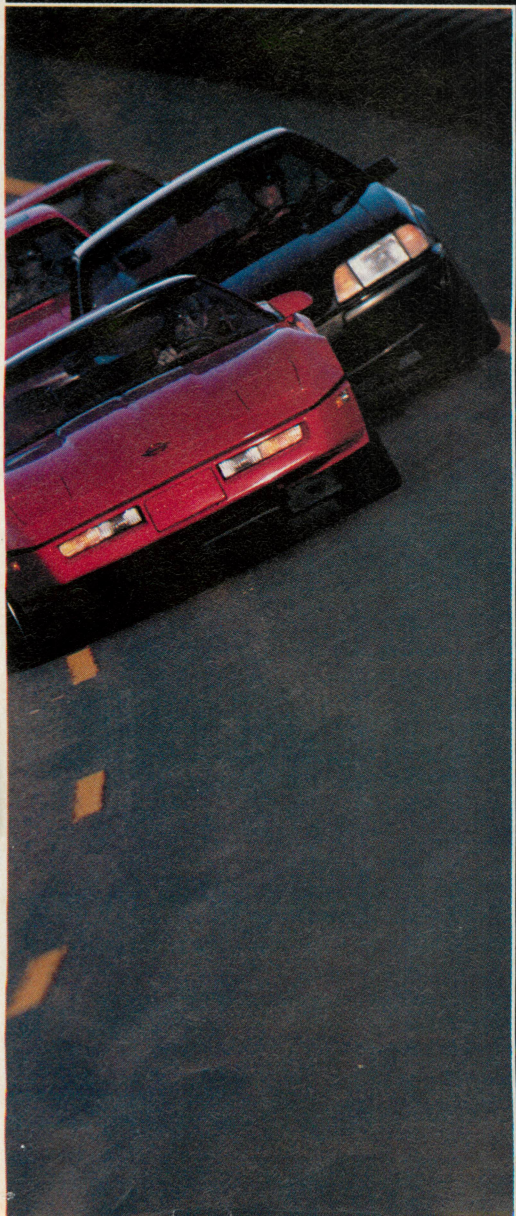
Vehicle configuration	Front engine, rear drive
Engine configuration	V-8, OHV, iron block and heads, liquid cooled
Displacement	4950 cc (302 cu in.)
Max. power (SAE net)	225 hp @ 4200 rpm
Max. torque (SAE net)	300 lb-ft @ 3200 rpm
Transmission	5-sp. man.
Suspension, f/r	Independent/live axle
Brakes, f/r	Disc/drum, power assist
Tires	255/60VR15
Tire mfr. & model	Goodyear Eagle GT
Overall length	4562 mm (179.6 in.)
Curb weight	1381 kg (3045 lb)
Base price	$11,865

Ford Taurus SHO

Vehicle configuration	Front engine, front drive
Engine configuration	V-6, DOHC, cast alloy block and heads, liquid cooled
Displacement	2982 cc (182.2 cu in.)
Max. power (SAE net)	220 hp @ 6000 rpm
Max. torque (SAE net)	200 lb-ft @ 4800 rpm
Transmission	5-sp. man.
Suspension, f/r	Independent/independent
Brakes, f/r	Disc/disc, power assist
Tires	215/65VR15
Tire mfr. & model	Goodyear Eagle GT+4
Overall length	4785 mm (188.4 in.)
Curb weight	1316 kg (2901 lb)
Base price	$19,739

Oldsmobile Cutlass Calais Quad 4 H.O.

Vehicle configuration	Front engine, front drive
Engine configuration	Inline 4, DOHC, cast iron block, cast alloy head, liquid cooled
Displacement	2261 cc (138 cu in.)
Max. power (SAE net)	180 hp @ 6200 rpm
Max. torque (SAE net)	160 lb-ft @ 5200 rpm
Transmission	5-sp. man.
Suspension, f/r	Independent/ semi-independent
Brakes, f/r	Disc/drum, power assist
Tires	205/55VR16
Tire mfr. & model.	Goodyear Eagle VR55
Overall length	4542 mm (178.8 in.)
Curb weight	1243 kg (2740 lb)
Base price	$14,395



Plymouth Laser RS

Vehicle configuration	Front engine, front drive
Engine configuration	Inline 4, DOHC, cast iron block, cast alloy head, liquid cooled, turbocharged
Displacement	1997 cc (121.8 cu in.)
Max. power (SAE net)	190 hp @ 6000 rpm
Max. torque (SAE net)	203 lb-ft @ 5000 rpm
Transmission	5-sp. man.
Suspension, f/r	Independent/ semi-independent
Brakes, f/r	Disc/disc, power assist
Tires	205/55VR16
Tire mfr. & model.	Goodyear Eagle GT+4
Overall length	4330 mm (170.5 in.)
Curb weight	1240 kg (2734 lb)
Base price	$14,500

Dodge Shelby CSX

Vehicle configuration	Front engine, front drive
Engine configuration	Inline 4, SOHC, cast iron block, cast alloy head, liquid cooled, turbocharged
Displacement	2213 cc (135 cu in.)
Max. power (SAE net)	175 hp @ 5200 rpm
Max. torque (SAE net)	200 lb-ft @ 3400 rpm
Transmission	5-sp. man.
Suspension, f/r	Independent/ beam axle
Brakes, f/r	Disc/disc, power assist
Tires	225/50VR15
Tire mfr. & model.	Goodyear Eagle VR50
Overall length	4361 mm (171.7 in.)
Curb weight	1266 kg (2790 lb)
Base price	$15,500

Pontiac McLaren Turbo Grand Prix

Vehicle configuration	Front engine, front drive
Engine configuration	V-6, OHV, cast iron block and heads, liquid cooled, turbocharged
Displacement	3128 cc (191 cu in.)
Max. power (SAE net)	205 hp @ 4800 rpm
Max. torque (SAE net)	220 lb-ft @ 3200 rpm
Transmission	4-sp. auto.
Suspension, f/r	Independent/ semi-independent
Brakes, f/r	Disc/disc, power assist, anti-lock
Tires	245/60ZR16
Tire mfr. & model.	Goodyear Eagle ZR60 Gatorback ZR60
Overall length	4926 mm (193.9 in.)
Curb weight	1565 kg (3450 lb)(est).
Base price	$25,000 (est)

Pontiac 20th-Anniversary Trans Am

Vehicle configuration	Front engine, rear drive
Engine configuration	V-6, OHV, cast iron block and heads, liquid cooled, turbocharged
Displacement	3800 cc (245 cu in.)
Max. power (SAE net)	245 hp @ 4300 rpm
Max. torque (SAE net)	340 lb-ft @ 2800 rpm
Transmission	4-sp. auto.
Suspension, f/r	Independent/live axle
Brakes, f/r	Disc/disc, power assist
Tires	245/50ZR16
Tire mfr. & model	Goodyear Eagle ZR50
Overall length	4862 mm (191.4 in.)
Curb weight	1575 kg (3472 lb)
Base price	$20,399

Engineers can no longer design to technological limits, they must appease the insatiable insurance gods

of the few analog speedometers that accommodates the speed potential of the car, reading a steady 142 mph at 6200 rpm past the gun. The radar speed was 140 mph.

Shelby's buzz-bomb CSX was up next, and leaving the pits it waggled its front wheels in protest. Protest against so much power, that's what. It accelerated like a prepared showroom-stock racer, jiggled along on its harsh suspension like it was real serious about all this. At top speed on the banking, it occasionally touched the suspension bump stops and felt darty and quick. The noise level was high as the little 2.2-liter motor gave its all (and it apparently had quite a bit to give). The tach read 6100 rpm, and the speedometer said 5 mph—the second time around. The radar gun told the real story, 148 mph. Pretty amazing, eh? See what skunk works can do with limited-production vehicles?

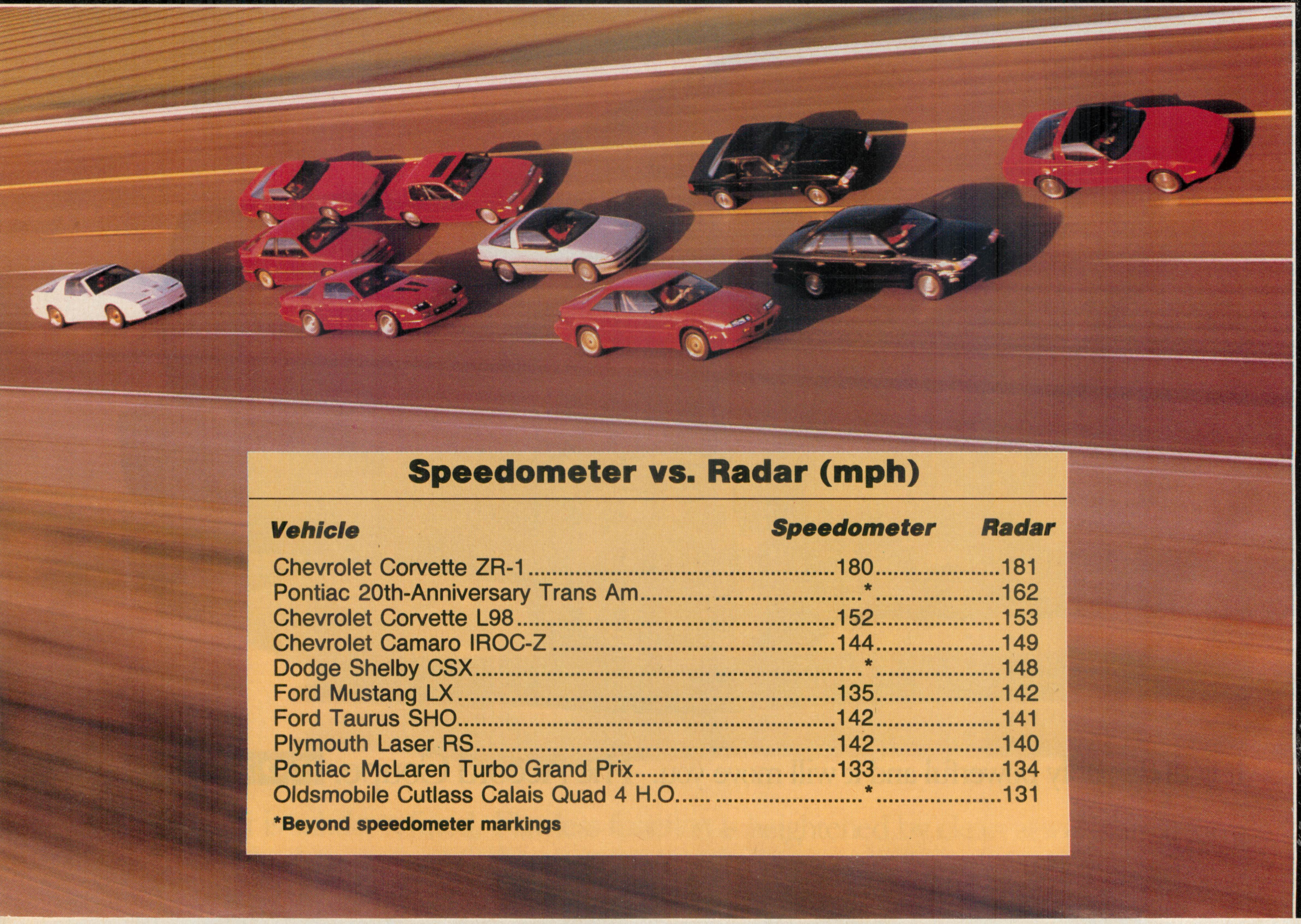
Our Pavlovian response was at full tilt as we slid behind the wheel of the application. We weren't disappointed. It's incredibly smooth and the power builds progressively right to the redline. Max power comes at 6000, but the engine feels like it wants to keep right on accelerating. Why are we not surprised? That's how motorcycle engines work. In top gear, the engine could only manage 5300 before the aerodynamic drag caught up with it, and that's what it read as we whistled by the timing position. The speedometer said 142, and the radar 141.

In the absence of the Thunderbird SC, the Mustang was the only other Ford product to loop the oval under our watchful eyes. The odometer on Kevin Hite's pride and joy read 40,500 miles as we pulled out on the track, which is certainly some kind of record for a test such as this. With that many miles on the engine, it was nice and loose and zinged its way around the track without effort. The chassis felt its age and wandered dimmed this one a bit. It ran right to the redline in every gear and seemed happy doing it. The radar told the story: 142 mph. The speedo didn't appreciate how little the engine had aged by reading a pessimistic 135 at 4100 rpm. The odometer now read 40,515. That's without question the fastest 15 miles this car will ever do.

Okay, okay. We know you've been waiting to see how the much-publicized Corvette ZR-1 will do. Frankly, we've been waiting a long time, too, but the waiting is over.

There it sat. With a key in it. No, with two keys in it—one the ignition, the other the prized power key, which lets loose an estimated 100 extra horsepower, the key to unlocking Corvette nirvana.

We stood dumbfounded, thinking *you mean I really get to drive it as fast as I want* kinds of thoughts. The ZR-1 at top speed? Would they really let us go for it? The answer was yes. Sorta. But not in the ZR-1 that we had run



Speedometer vs. Radar (mph)

Vehicle	Speedometer	Radar
Chevrolet Corvette ZR-1	180	181
Pontiac 20th-Anniversary Trans Am	*	162
Chevrolet Corvette L98	152	153
Chevrolet Camaro IROC-Z	144	149
Dodge Shelby CSX	*	148
Ford Mustang LX	135	142
Ford Taurus SHO	142	141
Plymouth Laser RS	142	140
Pontiac McLaren Turbo Grand Prix	133	134
Oldsmobile Cutlass Calais Quad 4 H.O.	*	131

*Beyond speedometer markings

ners to each cylinder that, in conjunction with the dual intake valves, work individually below 4000 and paired above to achieve the result.

The Mustang LX comes with the 5-liter V-8 that's been with us for decades and continues to surprise us every year with more power and better

A huge roostertail of dust exploded along behind the ZR-1 like some dryland speedboat

tona, which is turbocharged and intercooled and produces 79 hp/liter. The Yamaha/Ford V-6 in the Taurus SHO is considered excellent at 73 hp/liter, so you begin to see just how good this Quad 4 is. It's not only a high specific output engine, but it has excellent noise/vibration/harshness (NVH) characteristics for a 4-cylinder engine without a balance shaft.

Chevrolet tipped the scales with three entries. First was an '89 IROC-Z, loaded for bear with the 5.7-liter TPI V-8 and automatic transmission. The latest in a long line of IROCs now pumps out 240 hp with the optional free-flow exhaust. Bodywork remains unchanged, and the car is as tastefully done as ever, no glaring graphics or wild spoilers, *just* clean lines and functional styling.

We also were supplied with a

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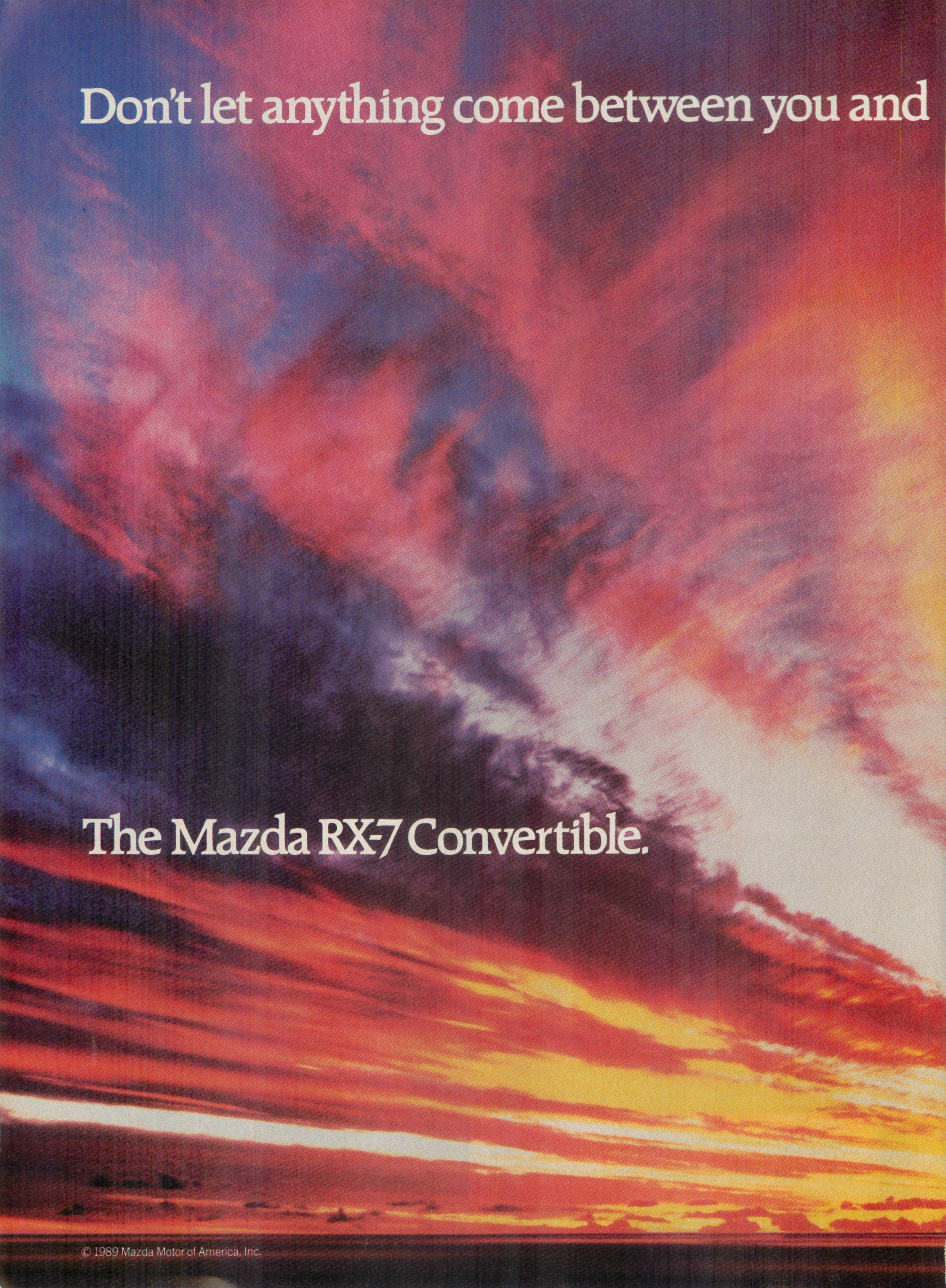
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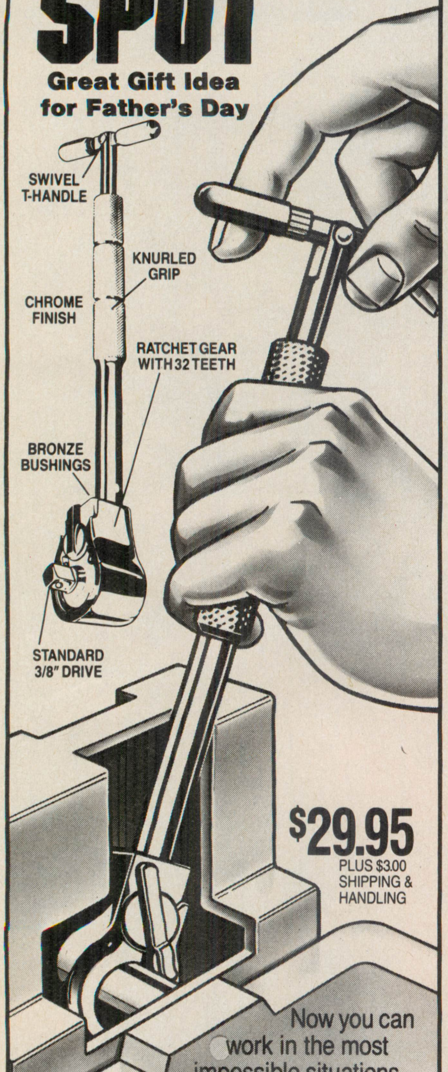

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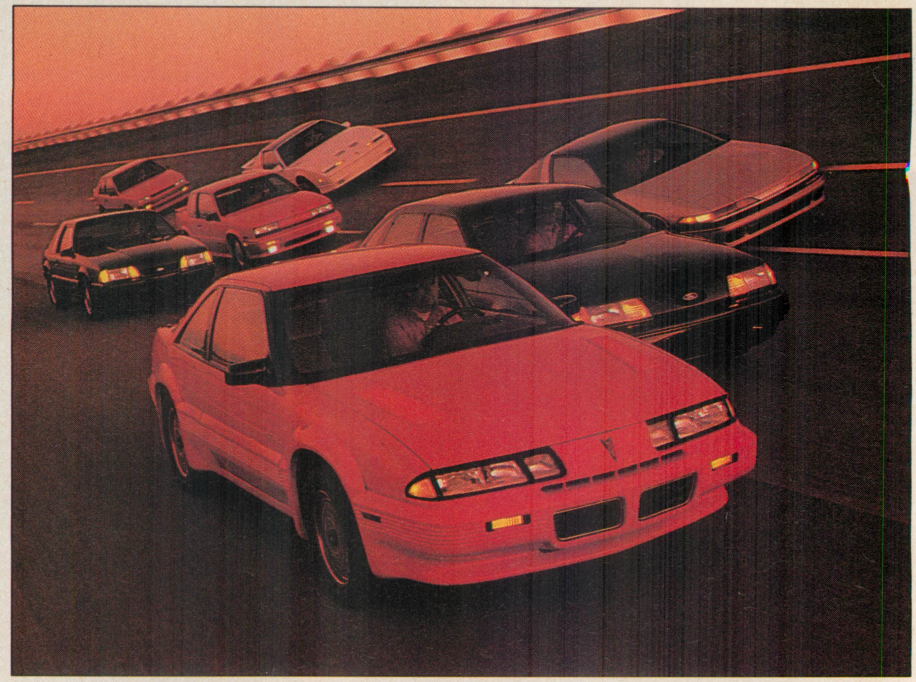


all our other performance tests on the day before at Chevrolet's behest. No, now there was a second "ZR-1," one that looked lower and sounded stronger. Never mind, this was no time to stand around nit-picking. Chevy had told us it was a ZR-1, with the magic 4-valve motor, and the driver's seat was empty.

In a flash, we were out of the pits onto the long straightaway and fully into the engine, all 11 throttle plates wide open, 16 fuel injectors squirting fuel, revs climbing, and the wonderful wail of air screaming into the engine. It's a visceral song of pure power. Jim Minneker, Chevrolet engine chief, had told us to use 5th gear because 6th was too high, and since the car was so stable, we just watched the results unfold on the digital instruments.

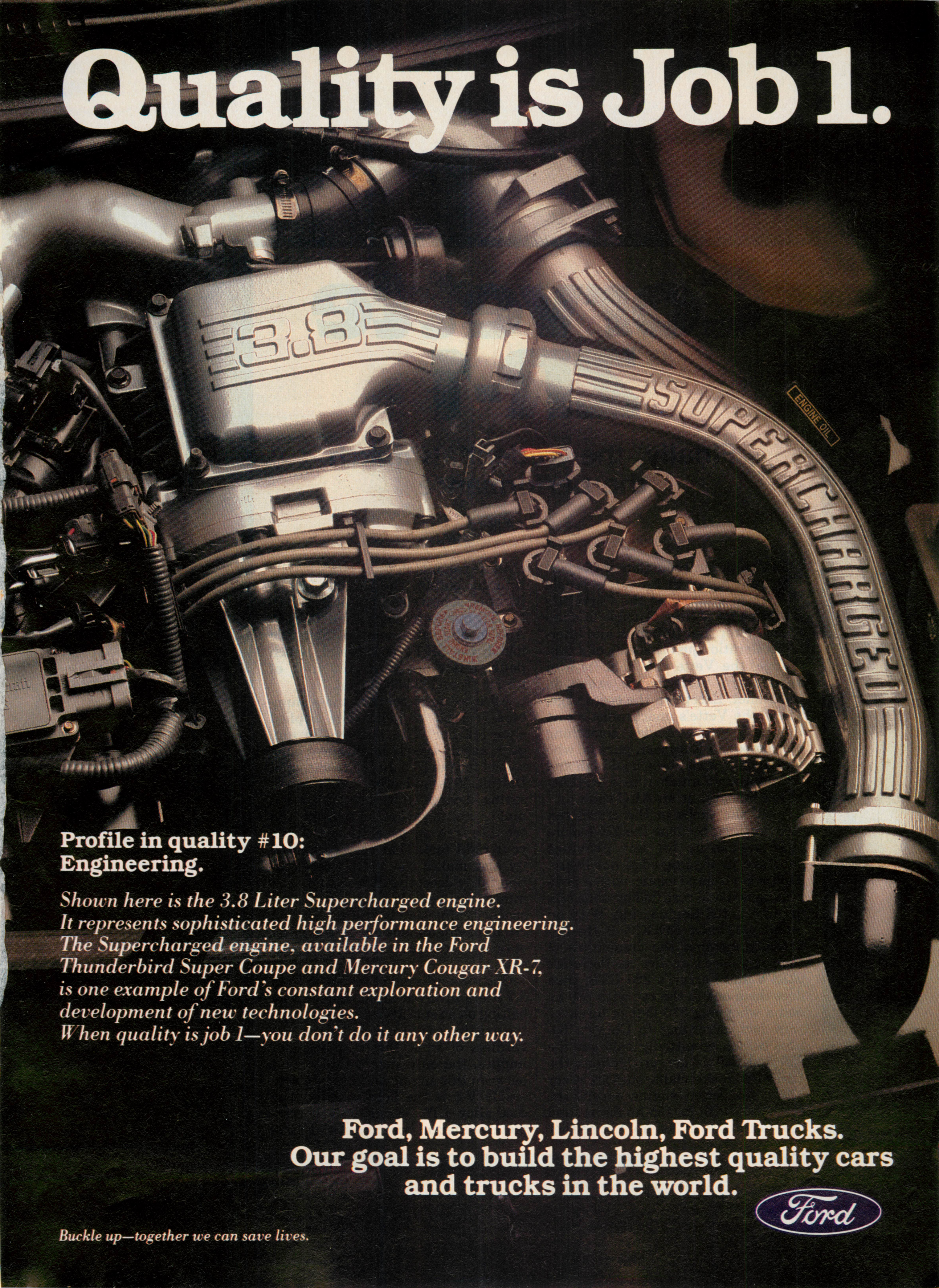
The bar graph speedo was pegged at 85 almost before we got out of the pits, but the digital readout continued its climb, as we worked up through the gears, shifting at 6300, the power peak. We were in 5th before coming down off the banking exiting Turn 2, and passing through 160 . . . 165 . . . and 175 as we blew by the radar gun the first time going into the Turn 3 banking. Exiting the bank, we had 177 . . . 179 at the end of the straight, back to 178 up on the 1-2 bank and then down the straight toward the radar . . . 179 . . . 180, with 6300 showing on the tach. We had just gone 9.5 miles at full throttle. Our terminal speed as recorded by the radar gun was 181 mph. The car was incredibly stable, competent, at ease at well over three times the national speed limit.

Chevrolet allowed us to run at top speed in its new baby with the stipulation that it be in a ZR-1 equipped with a rollcage. The Vette with the rollcage, whose run we just described, had been used by Chevrolet engineering for high-speed testing and was lowered, had different wheels (dimensionally the same as stock 17-in. wheels) and a five-point racing harness. This was done for the safety of those test drivers who drone around for extended periods at high speed.

The other ZR-1 was not equipped with a rollcage, so, Chevy informed us, it couldn't be used for top speed, but we did drive it extensively over the course of two days. With that experience, our best estimate for the top speed of a *production* ZR-1, which we guess will be much more like the non-rollcage-equipped car than the rollcage car, is 175-178 mph.

Some random thoughts from Jim Miller, who manned the radar gun as we repeatedly blew by him at indecent speeds all day long:

- The rollcage-equipped ZR-1 dragged a huge roostertail of dust behind it and was the only car that could be heard coming off the banking over a mile away. The others couldn't be heard until they were within a half mile.
- The H.O. Quad 4 in the Calais had the best engine sound as it went by.
- Next time, somebody else has to stand out there in the hot sun and read the stupid radar gun all day while everybody else has all the fun, and lunch was always late out there, and . . . MT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3.8
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Shown here is the 3.8 Liter Supercharged engine. It represents sophisticated high performance engineering. The Supercharged engine, available in the Ford Thunderbird Super Coupe and Mercury Cougar XR-7, is one example of Ford's constant exploration and development of new technologies. When quality is job 1—you don't do it any other way.
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Corvette ZR-1

Finally, the credentials match the performance

by Jim Miller

PHOTOGRAPHY BY VIC HUBER; BOB D'OLIVO, PETERSEN PHOTOGRAPHIC

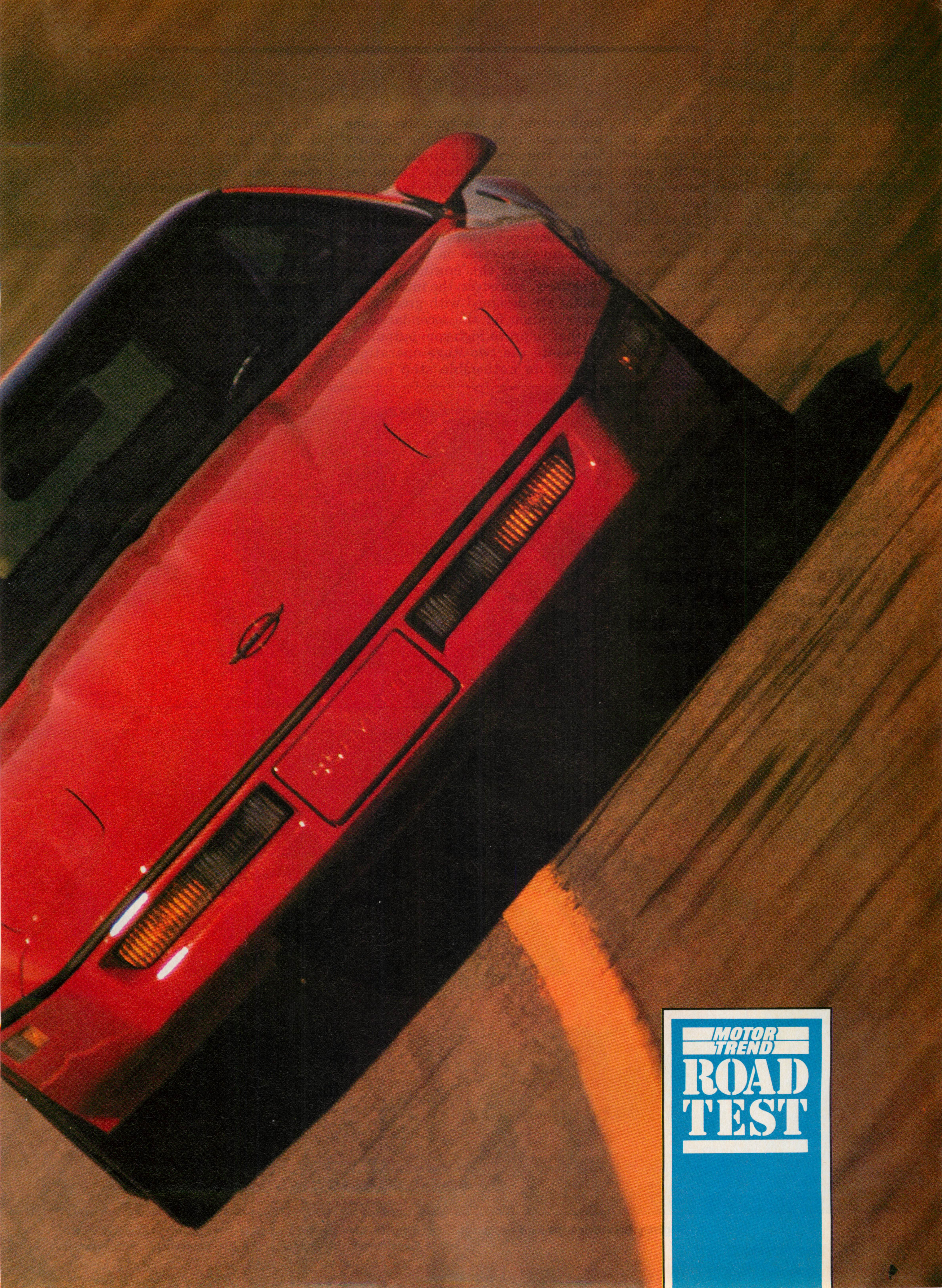
Since the introduction of the current model in 1984, few people have questioned the Corvette's performance ability. Capable of a top speed better than 150 mph and lateral acceleration just this side of a centrifuge, the Vette can hold its own against any performance exotic on the planet. Except on the specs page. There the Vette's anachronistic cast iron OHV V-8 has made it something of a poseur to European purists, who looked on it with noses held high and considered it much like a well-behaved mongrel at an AKC show.

Well, the snobs in the crowd can stop sniffing, because the ZR-1 more than makes up for any previous shortage in leading-edge hardware. This is a purebred exotic, with a pedigree signed and certified by none other than Lotus Engineering. With an all-alloy 32-valve DOHC V-8, the ZR-1 easily matches the credentials of such registered exotics as Porsche's 928S 4 and Ferrari's 328 GTB, then does them one in the eye with 380 hp and a whopping 370 lb-ft of torque.

In fact, according to Chevy's figures (which admittedly rule out the 959 and F40 as non-production), the LT5's 380-horse claim outdoes every other production engine except the Countach, with its 455-hp figure, and the Testarossa, at 380 hp. Yet neither of those can match the Vette's 370 lb-ft torque output. The Lambo's 369 lb-ft rating comes close, but at 354 lb-ft, the TR misses by more than 15 lb-ft. And in any case, none of them can match the ZR-1's powerband, which pours out more than 300 lb-ft of torque from 1000-5000 rpm.

All it takes to confirm those numbers is a bit of judiciously applied shoe leather. The phrase "in any gear, at any speed" might have been coined for the LT5. In the tradition of Detroit V-8s and other great labor-saving devices, this latest iteration makes acceleration as simple and trouble-free as possible—just flex your right foot. That easy accessibility also makes the Vette's acceleration fairly deceptive. There's no camminess, no frenetic jump into hyperspace. Traffic simply shifts from micro to macro dimensions in the blink of an eye, without so much as a gear change.

Getting that kind of response from 5.7 liters involved more than simply bolting on a set of 16-valve heads onto the existing cast iron small-block. Regardless of what that displacement implies, the only shared dimensions between this engine and Chevy's venerable V-8 is the bore spacing. The cast alloy LT5 engine uses a completely different bore and stroke (3.90


MOTOR TREND
ROAD TEST

ZR-1

x 3.66 in., compared with 4.00 x 3.48 in.) to arrive at that displacement. In addition, aluminum alloy replaces cast iron as the block material, with Nikasil-treated cylinder bores—rather than cast iron liners—handling cylinder sealing. Topping off this block is a pair of heads with four valves per cylinder, actuated by chain-driven dual overhead camshafts and hydraulic bucket tappets, à la Porsche 928.

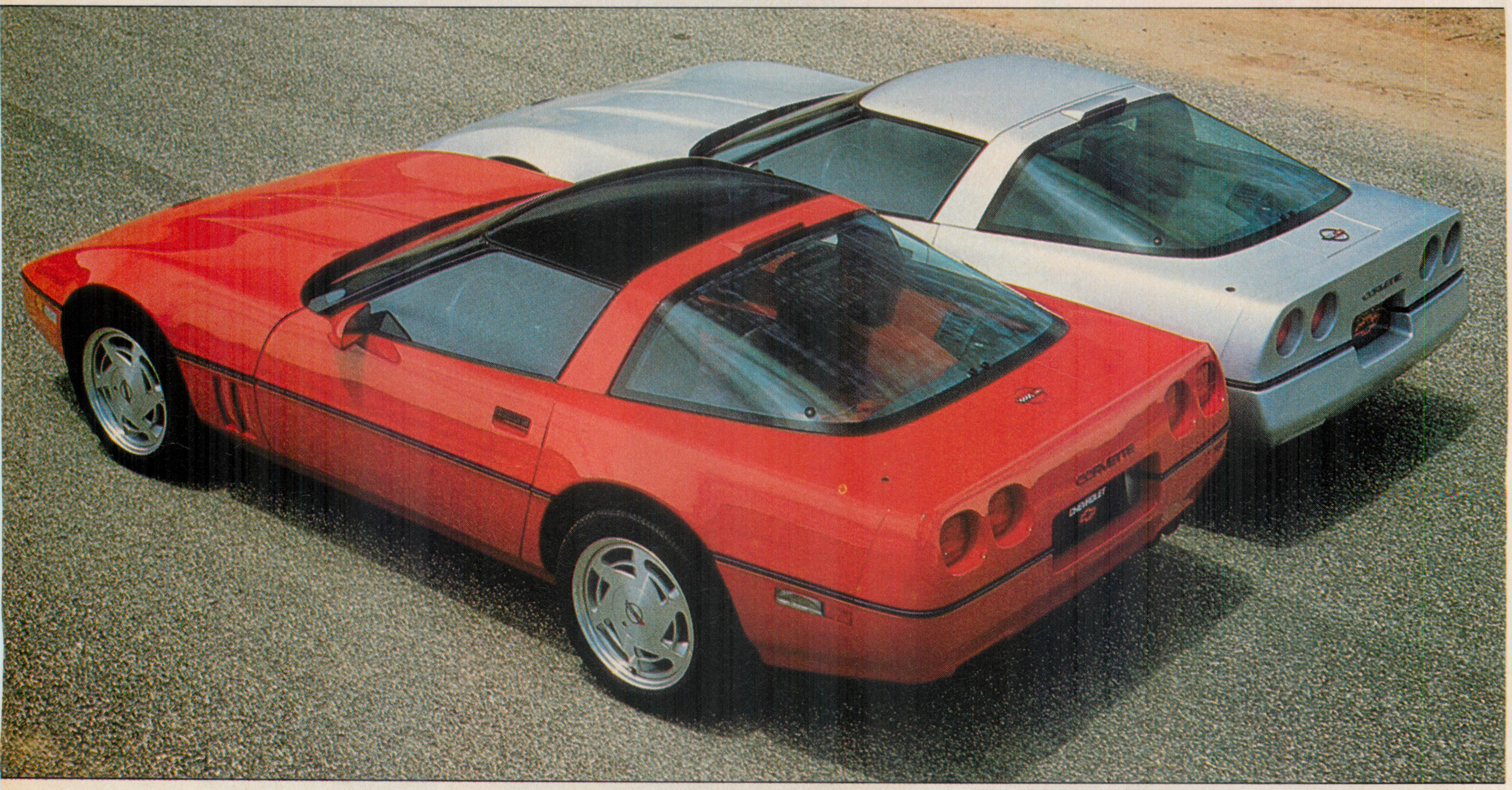
While this valve arrangement might be considered standard high-roller fare, the intake system deviates from that norm. A dual-runner intake manifold feeds each valve individually. Each cylinder has a primary and secondary intake runner, with each fed by a single fuel injector. In addition, each secondary is controlled by an individual butterfly valve. A 3-valve throttle body feeds these runners through a plenum above the engine.

The system is designed to provide a broad powerband without limiting peak output. At low rpm, the engine operates only on the smaller primary intake runners and a single throttle plate in the throttle body. The larger secondaries in the throttle body start to open at 80% primary throttle opening. Likewise, above 3500 rpm, the secondary runners open fully and their injectors come on line, to take advantage of the engine's better breathing. Moreover, the intake camshafts are designed with greater lift and duration for the secondaries, to further improve high-rpm output.

Despite the two-stage operation, there's no noticeable step in the LT5's powerband. Power flows from the ZR-1 in a Niagara-like rush that makes the slick-shifting Getrag 6-speed seem ridiculously redundant. That's not to underestimate the engine's potency, however. With a top speed in the neighborhood of 175 mph, a 0-60 time of 4.71 sec, and a 13.13-sec/110.0-mph quarter mile, no one's going to accuse the DOHC Vette of being limp-wristed. What's more, the nearly direct proportion between power and rpm makes this latest Vette—like its L98 sibling—exceptionally predictable.

That predictability also extends to

This is a purebred exotic, with a pedigree signed and certified by none other than Lotus Engineering



Slightly broader hips and rectangular taillights differentiate the ZR-1 from the standard Vette. Huge Gatorbacks lurk under the ZR-1's swollen rear flanks.

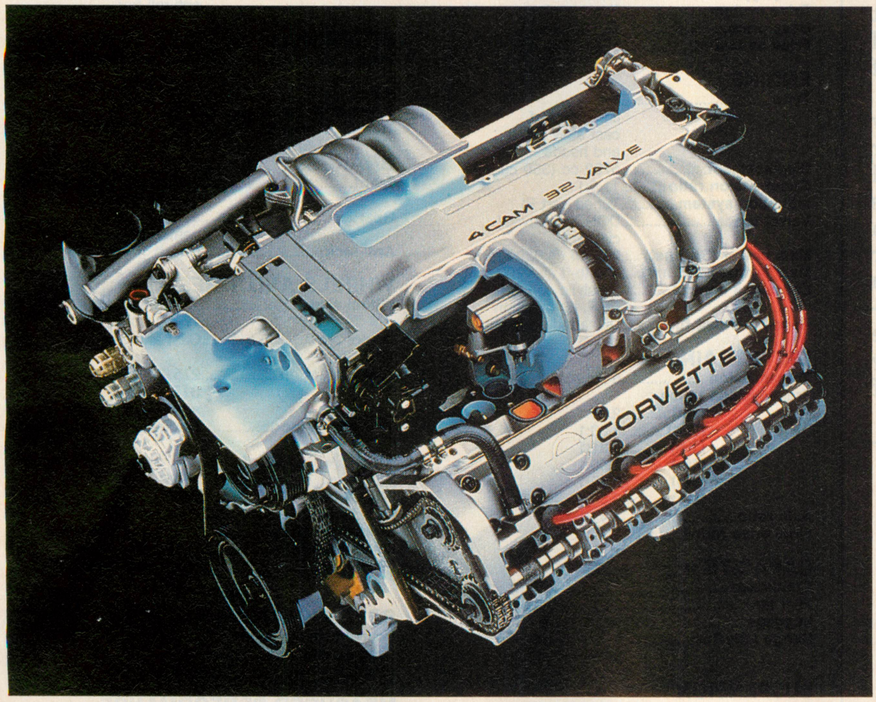
the chassis. Chevrolet engineering *uprated* the ZR-1's chassis with larger brakes at the front, 13-in., up 1 in. from the L98's binders. Bosch ABS provides additional control when available stopping power doesn't quite comply with road conditions. Surrounding those larger discs are 17-in. wheels and immense, 315/35ZR17 Goodyears at the rear. At the front, generous 275/40ZR17s complement the rear Gatorbacks. As you might expect with this much rubber, the car grips like a pit bull on a mailman; our test car pulled 0.98 g on the skidpad on full-depth tread. Shaved tires could easily boost that figure over 1 g.

Equally important, the Vette telegraphs those limits by drifting ever so gently to the outside of the turn. Obviously, with nearly 400 horses under the reins, sliding the rear end around requires nothing more athletic than slipping your toe a micron deeper into the powerband. And if you get seriously sideways, lifting the throttle or even a quick stab at the brakes brings the car back where it's pointed. Under most circumstances, lifting the throttle causes nothing more threatening than a slight tightening of the line. In fact, during really hard cornering, it's sometimes simpler to avoid the car's quick steering (2.25 turns lock to lock), and fine-tune the line with your right foot rather than your fingertips.

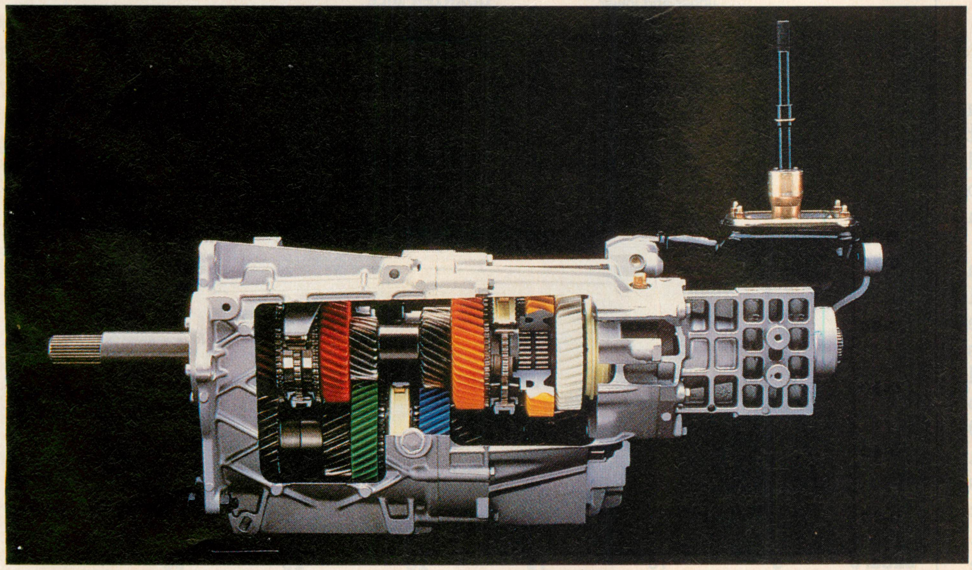
Combined in one package, this kind of handling and performance makes the ZR-1 Chevrolet's answer to Federal Express. Surprisingly; it darts from one apex to the next without afflicting you with every crack, pebble, or cigarette butt in between. The ZR comes standard with the Bilstein-developed Selective Ride Control, which allows the driver to choose between Tour, Sport, or Competition shock absorber settings.

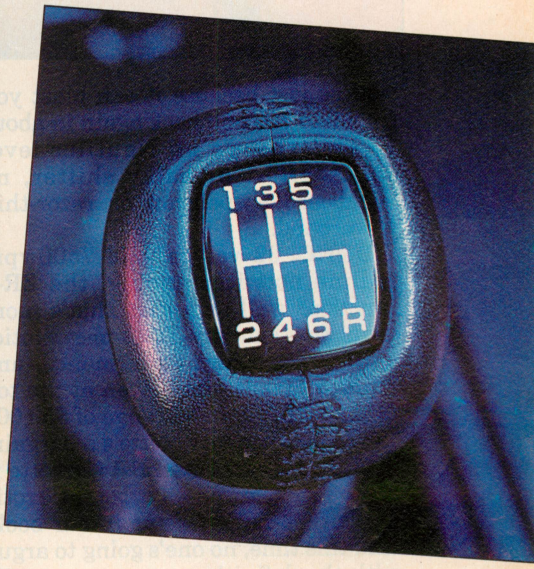
Each setting selects a range of six (five on Tour) damping adjustments automatically fine-tuned according to vehicle speed. Both rebound and compression damping vary, depending on the position of a rotary valve in the shock's piston rod. As speed rises, the valve closes the orifice, which firms up the damping by directing more of the shock oil through the shock's deflected discs.

We've seen this system before on an L98 Corvette and were frankly unimpressed. The shocks seemed too firm, regardless of their setting. But the arrangement works more successfully on the ZR-1, in part because of the car's additional 242 lb and the additional unsprung weight of the car's larger rear tires. Moreover, the damping settings were chosen specifically for the ZR and adapted to the L98, which could account—at least



DOHC, 32-valves, and 7500-rpm redline notwithstanding, the ZR-1 functions well as a car





The Getrag 6-speed is standard on all '89 Vettes, as is the annoying Computer Aided Gear Selection "skip-shift" feature.

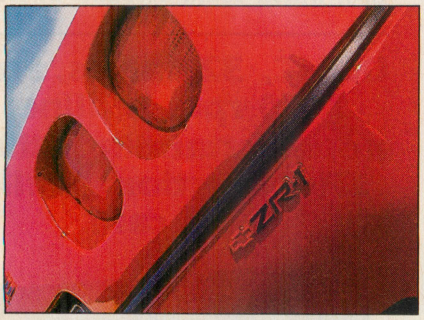
ZR-1

partially—for the disappointing harshness on the lighter car. Regardless of reasons, the system seems to work as advertised on the base car's more potent sibling. The LT5-equipped car rides surprisingly well, particularly considering its 175-mph potential and its performance on the skidpad.

That evaluation applies to much of the ZR-1. There's no doubting the car's potential—anyone who's had the opportunity to slide behind the steering wheel will come away impressed. At the same time, though, the car is surprisingly civilized, just as you'd expect of a Corvette. The car still has the requisite pops and squeaks from the interior (it's been beefed up, not transformed, remember), and it still has the seat controls spread over half the interior.

But it also possesses a uniquely American utility, one that never loses sight of the fact that this is still a car—a Chevy, in fact. As such, it's expected to stop, start, idle, and run for groceries as reliably as your neighbor's Cavalier. And yes, you have to make concessions for its being a 2-seater, which means you're not going to be strapping in any baby seats or piling in two weeks' worth of luggage and the kids.

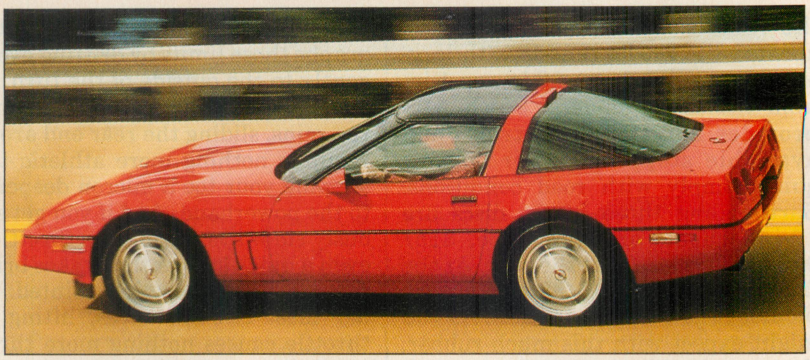
But it doesn't ask you to make sa-



crifices just because it can blast you from 0 to 100 and back again in about 14 sec. There's no Nautilus-level clutch effort or balky shifter, no buckboard suspension or razor-thin powerband.

DOHC, 32 valves, and 7500-rpm redline notwithstanding, the ZR-1 functions well as a car. That's more than you can say for some exotics with more modest performance—and a much higher price. Even at the top of Chevy's estimated range of $50,000 to $60,000, the new Vette's a bargain. And the fact that the ZR-1 Corvette is a good car as well as a potent exotic makes it a hell of a car in our book. And this time, no one's going to argue with the definition. **MT**

TECH DATA



Chevrolet Corvette ZR-1

GENERAL

Vehicle mfr.	Chevrolet Motor div., General Motors Corp., Warren, Mich.
Body type	2-pass., 2-dr.
Drive system	Front engine, rear drive
Base price	$55,000 (est.)
Price as tested	$55,000 (est.)

ENGINE

Type	V-8, liquid cooled, cast alloy block and heads
Displacement	5732 cc (350 cu in.)
Compression ratio	11.0:1
Induction system	Tuned port FI
Valvetrain	DOHC, 4 valves/cylinder
Max. power (SAE net)	380 hp @ 6200 rpm
Max. torque (SAE net)	370 lb-ft @ 4200 rpm
Emissions control	Catalytic converter, EGR, air injection
Recommended fuel	Unleaded premium

DRIVETRAIN

Transmission	6-sp. man.
Transmission ratios	
(1st)	2.68:1
(2nd)	1.80:1
(3rd)	1.31:1
(4th)	1.00:1
(5th)	0.75:1
(6th)	0.50:1
Axle ratio	3.43:1
Final drive ratio	1.77:1

CAPACITIES

Crankcase	11.4 L (12.0 qt)
Fuel tank	75.7 L (20 gal)
Luggage	507 L (17.9 cu ft)
Range (city/hwy.)	515/805 km (320/500 mi)

SUSPENSION

Front	Independent, upper and lower control arms, composite transverse leaf spring, gas-filled shocks, anti-roll bar
Rear	Independent, multi-link, composite transverse leaf spring, gas-filled shocks, anti-roll bar

STEERING

Type	Rack and pinion, power assist
Ratio	15.6:1
Turns (lock to lock)	2.25
Turning circle	12.2 m (40.0 ft)

BRAKES

Front	330 mm (13.0 in.), vented discs, power assist
Rear	305 mm (12.0 in.), vented discs, power assist
Anti-lock	Bosch

WHEELS AND TIRES

Wheel size	17 x 9.5 in. front, 17 x 11.0 in. rear
Wheel type	Cast aluminum
Tire size & construction	275/40ZR17 front, 315/35ZR17 rear steel-belted radial
Tire mfr. & model	Goodyear Eagle ZR

DIMENSIONS

Published curb weight	1572 kg (3465 lb)
Wheelbase	2443 mm (96.2 in.)
Overall length	4504 mm (177.4 in.)
Overall width	1880 mm (74.0 in.)
Overall height	1186 mm (46.7 in.)
Track, f/r	1513/1534 mm (59.6/60.4 in.)

SPECIFICATIONS

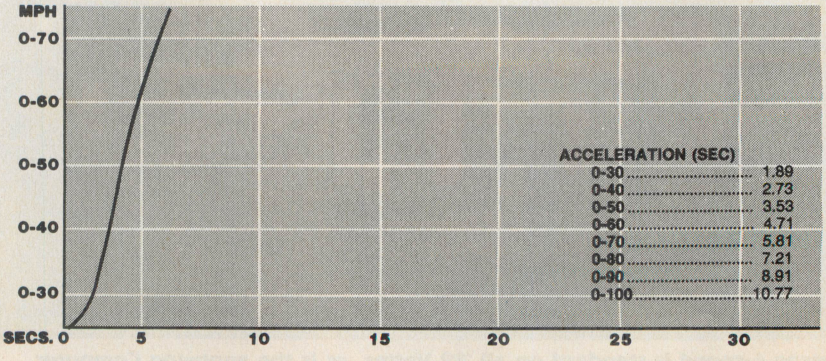
Power-to-weight ratio	13.2 lb/hp
Drag coefficient	0.31
EPA (city/hwy.)	Not available

MEASURED PERFORMANCE

QUARTER MILE	
TIME	13.13 sec
SPEED	110 mph
BRAKING	
60-0	125 ft (est.)
30-0	30 ft (est.)
SKIDPAD	0.98 g

SPEEDOMETER CALIBRATION

Indicated	30	40	50	60
Actual	30	40	50	60



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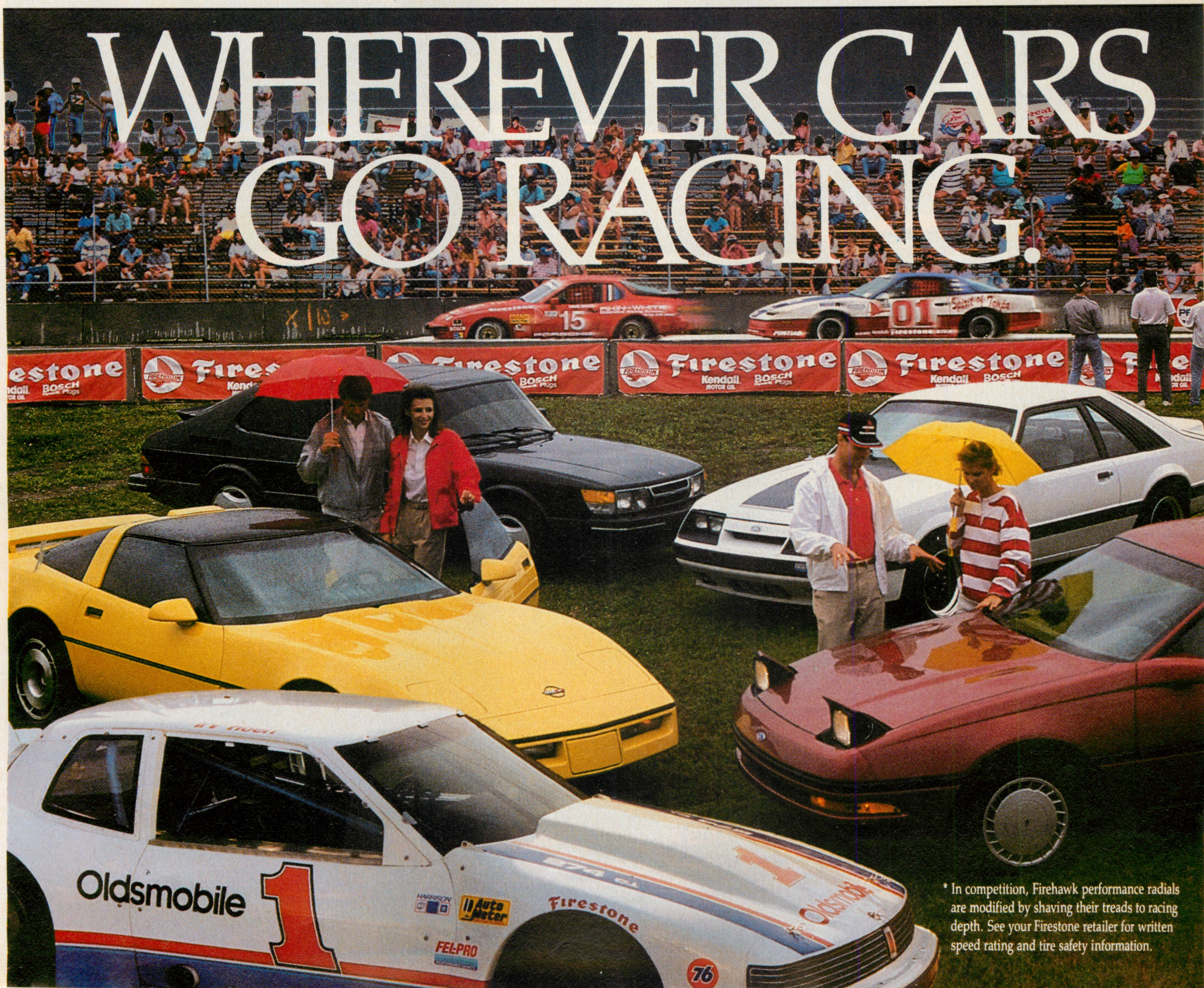

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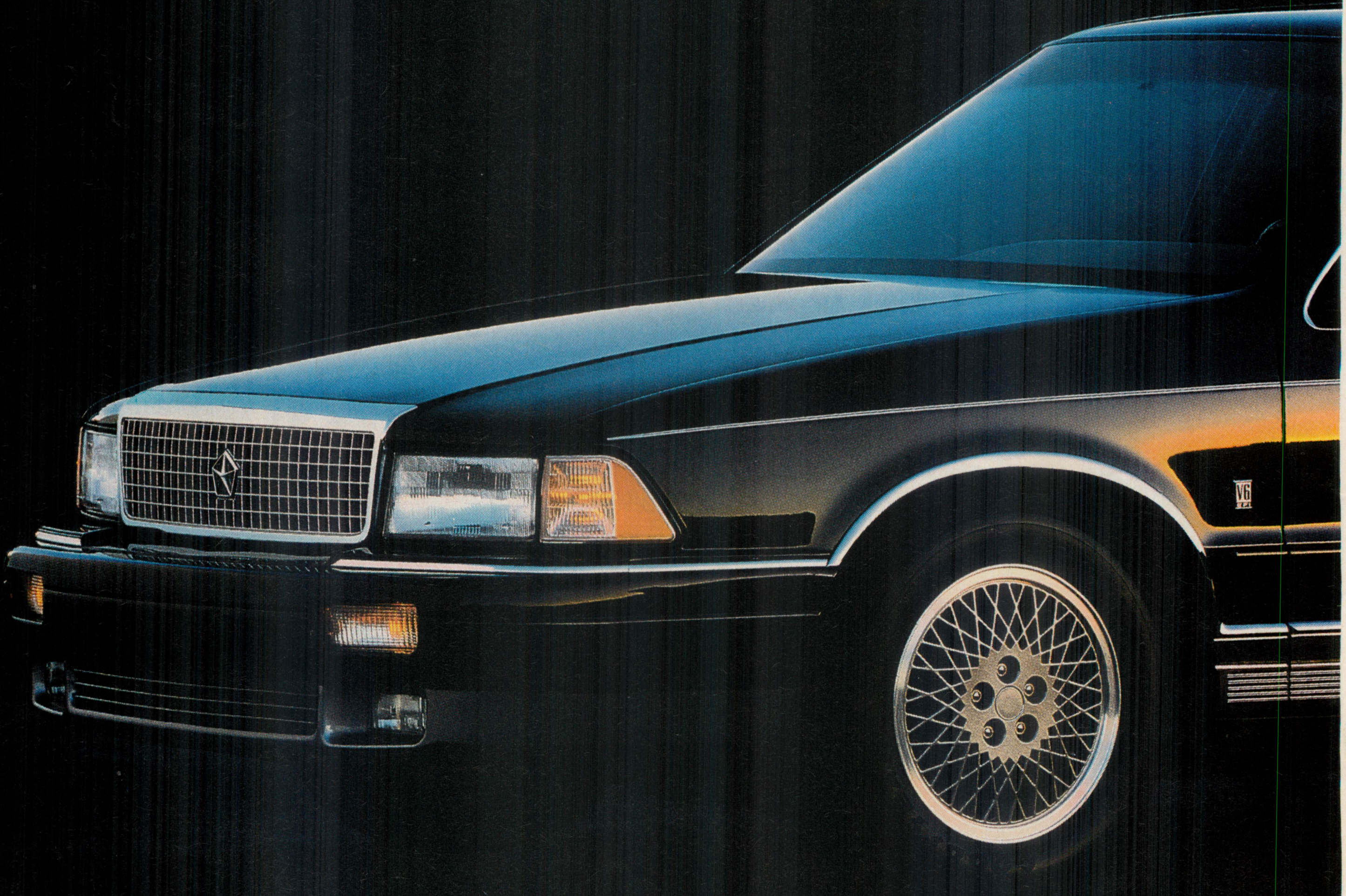

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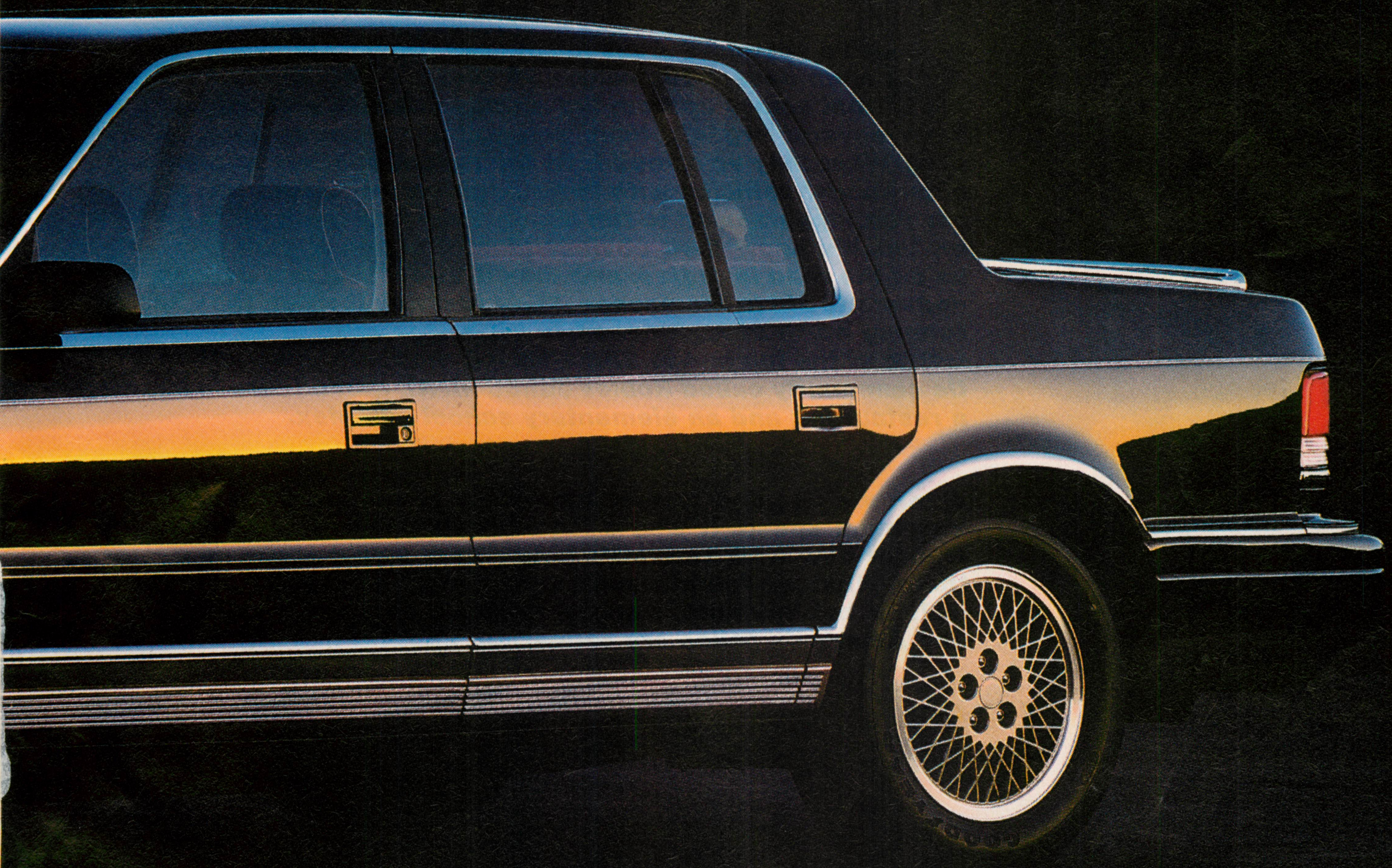

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High-Speed

We've got some areas down near the border that are wide-open desert. Highway 286 there is two-lane paved road that comes up from the Mexican border, and we know we have several organizations smuggling narcotics through this area. What they've turned to in the recent past are nondescript, older-model vehicles with large engines, not unlike the style of car bootleggers used to run liquor. They hop them up to go faster, too. We know their obvious plan of action if they encounter us on the road is to flee, and they'll throw in a few evasive maneuvers to aid in the escape. They just nail it when they see us, running north at high speed to hit a side road or to blend into traffic at the top end of 286 where it meets Highway 86 at a little community called Robles Junction. All that's there is a store, a restaurant, and an elementary school complex.

* * *

When we decided to test America's advanced street cars for maximum speed, it was a logical extension of the premise to wonder how well America's police cars would stack up against them. What we found wasn't surprising. The classic hot pursuit isn't so hot anymore. America's police cars are slowing down, and America's police are concerned about it in a big way.

Heat!

The fastest police cars in America

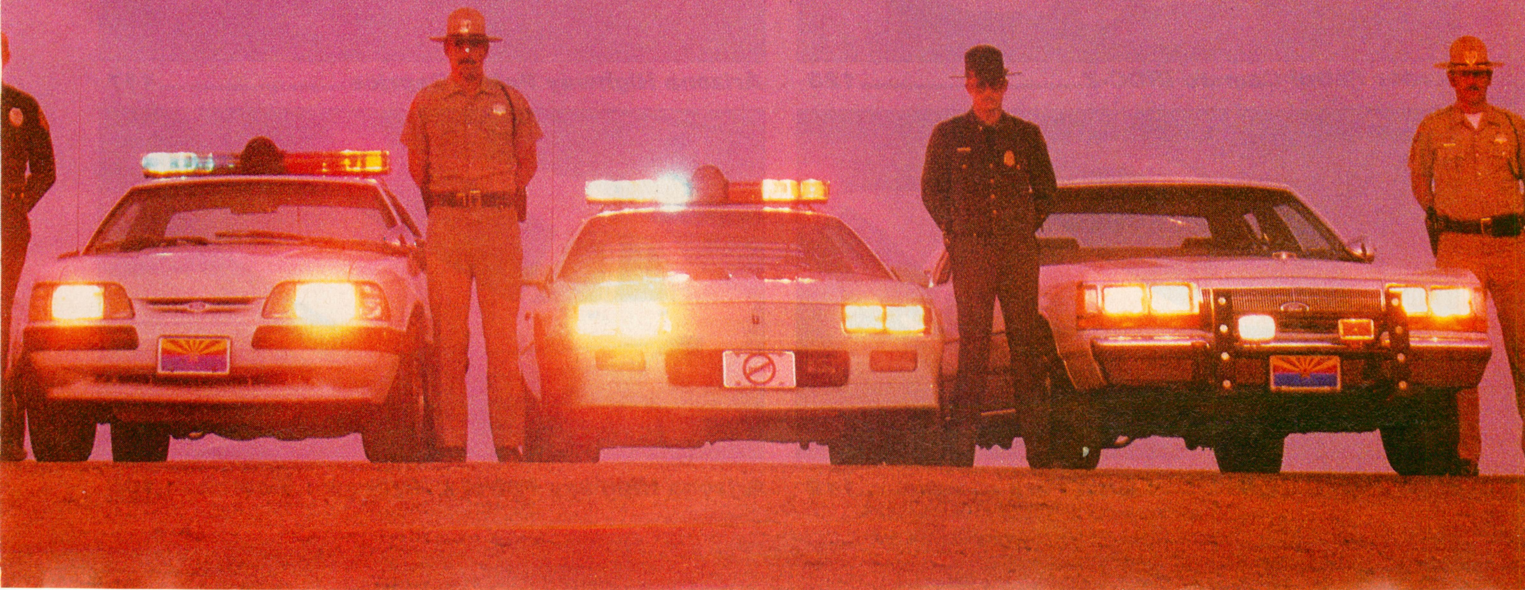
by Daniel Charles Ross

PHOTOGRAPHY BY VIC HUBER

Our top-speed tests of actual in-service police cars validate the crisis beyond suspicion. In the increasingly hostile radar environment out there, it's still impossible to out-run the Motorola police radio used to summon help, but most patrol cars flat can't keep up with some of the advanced street vehicles they pursue. Odd as it appears at first glance, the U. S. Border Patrol at Tucson has been instrumental in reformatting the police car's mission. Supervisory Agent Roy P. Gwaltney spearheads the cadre of Bob Bondurant-trained Border Patrol agents assigned to put the "hot" back into "pursuit."

"The trend to downsized engines and improved fuel economy just wasn't making it for pursuit work here in southern Arizona," said Chief Patrol Agent Ronald J. Dowdy, Tucson Sector, U. S. Border Patrol. In the traditionally big police sedans, sometimes all the good guys caught was a glimpse of the bad guys' taillamps receding in the distance. Something had to be done in one quick hurry, Dowdy reasoned, or the cops might as well just close the store. "Our catch times were increasing substantially," he told us. "We found we were having to run too far at 100 mph to overtake somebody doing 85."

Cue the dragons. At Dowdy's initiative, his station created Project Road Runner. The need was enough that it required ac-



tion. Dowdy acquired a 5-liter Mustang, a 5-liter Chevrolet IROC-Z, and two 5.7-liter Pontiac Firebird Formulas. Improving maximum speed wasn't the goal; reducing the catch time was. Shorter hot pursuits lessen the strain on man and machine, but also reduce the collateral danger that high-speed chases in populated areas create for the general public. Immediate disadvantages exist in using such cars for police duty, of course. There's no room for adult suspects, no ground clearance for most median turns, and only limited use on unpaved roads.

Border Patrol agents perform no speed-law enforcement, but they frequently engage suspects at high speed. Dowdy's station, one of 21 in the country, is responsible for the interdiction of drug runners and illegal-alien smugglers for the entire state of Arizona except three counties, including 281 miles of international border with Mexico.

Most patrol cars flat can't keep up with the advanced street vehicles they pursue

"We have almost daily pursuits with alien and drug smugglers," the chief drawled. "The vast majority of these are narcotics traffickers trying to run away at high speed. Alien smugglers are easier to catch. They're entirely too loaded down with 17 or 18 people in a van. But somebody with a 400-cube Oldsmobile and 400 pounds [of dope] in the trunk can get a little bit of steam up."

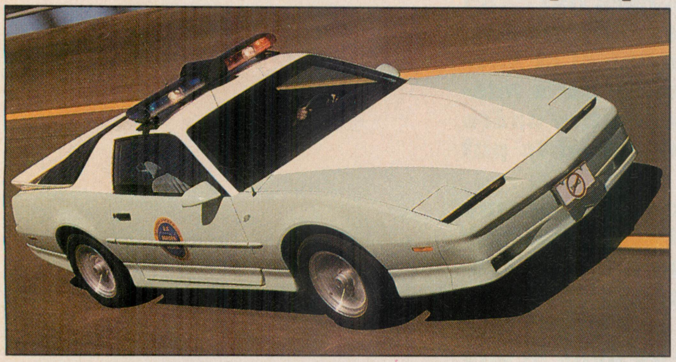
* * *

I had received some intelligence that marijuana and probably cocaine were to be transported on this highway. One of my agents was working the highway in the IROC this particular afternoon, and he encountered one of the tuned-up vehicles we expected, a '77 Oldsmobile Delta 88 with a 400-cube engine. Our agent saw the suspect vehicle coming northbound on 286 as he was going southbound. As the IROC turned around, the agent was burned by the driver of the load vehicle, who then sped away.

* * *

As we document here every month, the most effective new automotive technology on the planet is being poured into sport coupe and sport sedan development—at a distinct disadvantage to policemen. Higher-performance engines, smart (eventually active) suspensions, and aerodynamic profiles are the essen-

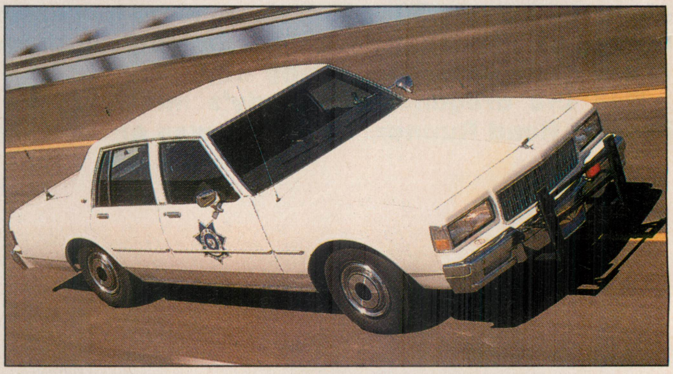
Top Speed (mph)



Border Patrol Firebird........136

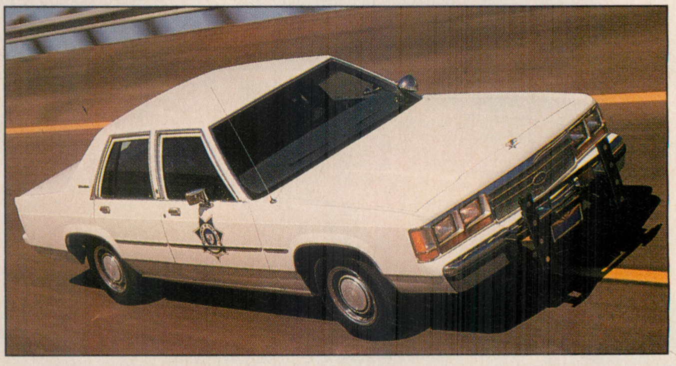
Arizona Highway Patrol Mustang........132

Border Patrol Camaro IROC-Z........123



Arizona Highway Patrol Caprice........117

Mesa Police Department Gran Fury........112



Arizona Highway Patrol LTD/Crown Victoria.....108

tial norm in today's street-vehicle macrocosm. The pure performance available to the average criminal is literally as awesome as his array of weaponry. We're not only talking about cars used by simple speeders, either. These hot vehicles are the getaway cars-of-choice for a wide spectrum of law breakers, from shoplifters to bank robbers.

In the big picture, police vehicle evolution has suffered from arrested development. Old engines, ancient suspension designs, and the aerodynamics of the Sears Tower conspire against cops in the chase. All that's left for most police officers to drive are the Chevrolet Caprice and the Ford LTD/Crown Victoria, the skeletal remainder of a squad of police platforms formerly available.

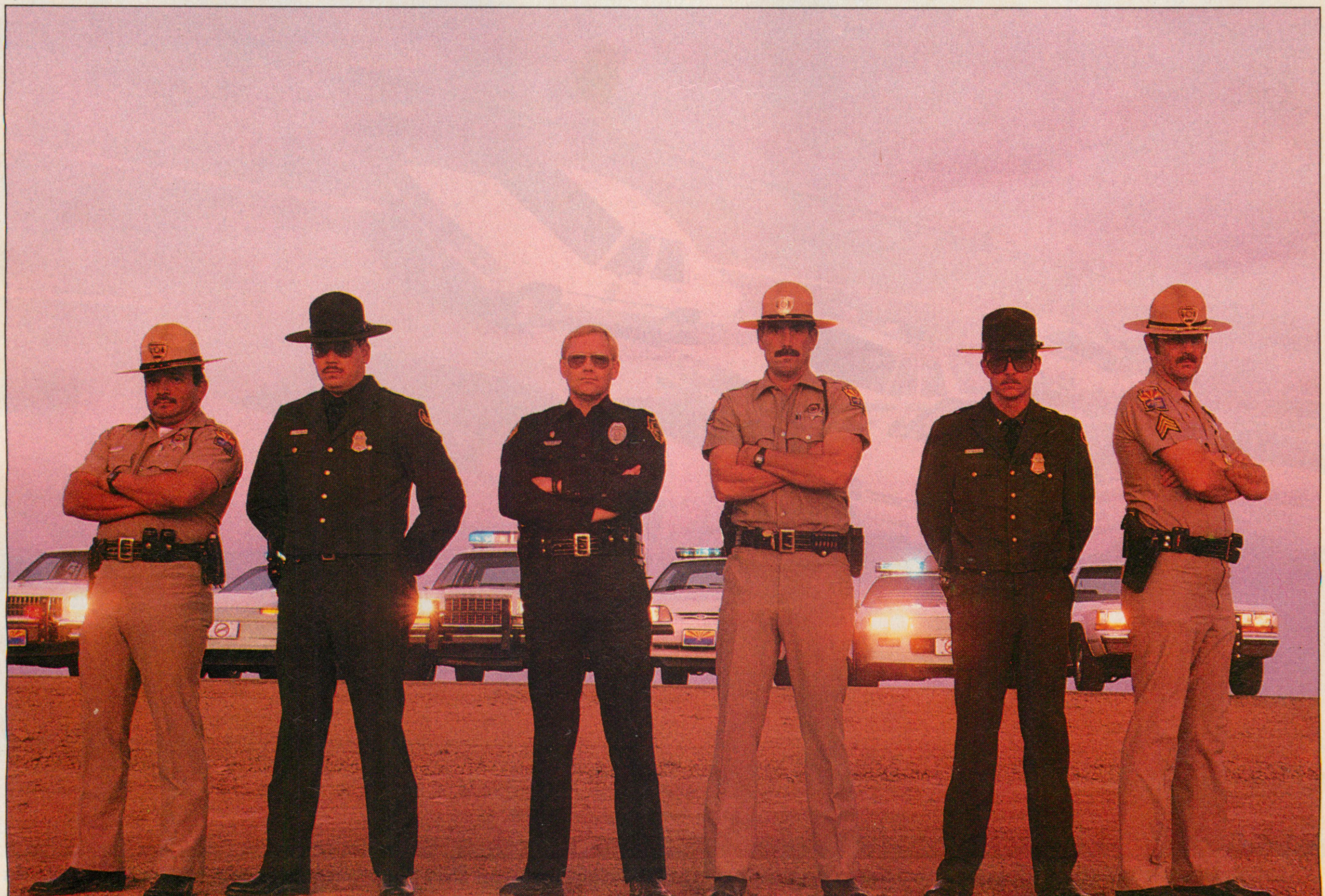
The '88 5-liter Crown Vic brought by the Arizona Highway Patrol (AHP) personifies the hot-pursuit crisis. In local city work, it holds up well, with decent acceleration, wide doors for suspects, and much comfort for officers, cops say. Unfortunately, the high-speed face it presents to the wind has the frontal area of the Vatican. No stealth car, its radar cross-section is so generous that it began reflecting our speed gun's microwave echoes more than 100 meters sooner than any other police car we tested. It also was the absolute slowest at speed, topping out for 6th place at only 108 mph, much to the chagrin of its AHP operator, Sgt. Bob Hohn.

We were frankly surprised at Officer John Bollman's '88 Plymouth Gran Fury, both man and vehicle on loan from the Mesa Police Department. Just look at it: We were certain it would be the slowest. Huge grille, upright greenhouse, light bar, and all, the car's 5.3-liter V-8 propelled it to 5th place with a consistent 112 mph. Next fastest was the '87 5.7-liter Chevrolet Caprice loaned to us by the AHP's Steve Vildusea. Here it was plain that engine overcame aero—but not by much. Vildusea's patrol car clocked 117 mph at top end for 4th place.

The performance available to the average criminal is as awesome as his array of weaponry

It's inappropriate to criticize the cops for these performances. They can only buy what's available. Pontiac, Buick, Oldsmobile, and the defunct American Motors ceased making police cars years ago. Chrysler abandoned the police market when its rear-drive M-car, the Plymouth Gran Fury/Salon and Dodge Diplomat, virtually the nation's official cop car, went out of production at the recent closing of the Kenosha, Wisconsin, assembly plant. Chrysler said it would reconsider the police field when a future product was suitable, but for now, cops are taking hard looks at non-standard alternatives to police car standards. The quest for a new level of police car performance and capability is a search-and-seizure mission with the highest priority.

Cops acknowledge that motivation for a swift solution exists aplenty: Just look at the speeds clocked by our flying squad of top-speed test cars. How can an LTD/Crown Victoria, maxed-out at 108 mph, close with a turbocharged Shelby CSX doing an astonishing 148 mph? The 20th-Anniversary Trans Am did 162 mph. And it's clear that only a police radio can compete with the ZR-1



Left to right: Steve Vildusea, Arizona Highway Patrol; John Stevenson, U.S. Border Patrol; John Bollman, Mesa Police Department; Brian LeDuc, Arizona Highway Patrol; Roy P. Gwaltney, U.S. Border Patrol; Sgt. Bob Hohn, Arizona Highway Patrol.

at perhaps 181 mph.

The Border Patrol experiment is still in progress, but agents driving the cars believe to a man that Project Road Runner is a big success so far. Even the bad guys apparently agree. Firebird pilot Gwaltney said, "In some cases, suspects actually told us they didn't run because they knew they couldn't out-run the cars." Our top-speed test of the Border Patrol F-cars indicated why. Agent John Stevenson's green and white '88 IROC-Z was timed at 123 mph, third fastest in the pursuit class. But Gwaltney's '88 Firebird was our top-speed Top Gun in 1st place at 136 mph. According to Dowdy, no suspect or vehicle has so far eluded a Road Runner car. The handwriting, however, is on the wall. When a non-turbo 2.3-liter 4-cylinder can blast through the atmosphere almost as fast as a 5.7-liter V-8 Firebird, the embarrassing technology and performance imbalance is unmistakable. The slowest street car in our top-speed test group was the Cutlass Calais Quad 4 H.O. The Olds 4-banger was timed at 131 mph. The next drug runner won't have a '77 Delta 88. Road Runner cars won't be invincible forever.

* * *

The agent was able to turn around and catch up to the subject vehicle in a short distance. We later determined the entire encounter occurred in a distance of two miles. As he closed on the Oldsmobile, our agent could see the obviously surprised suspect driver frantically checking his mirror as the IROC grew in it. When the suspect realized he couldn't avoid our agent, he simply pulled off the road into a wash and fled on foot.

A small fleet of police-marked '88 Ford T-Birds is being tested with the '89 Thunderbird SC 3.8-liter V-6 engine

* * *

Selection of a production car for police work is subject to many criteria relating directly to specific needs. "We look at the cars that are on the market and evaluate them against our needs in terms of interior space and performance on the road," said Tom Cochrane, fleet manager for the Arizona Department of Public Safety. The AHP is its most visible branch. The state has a performance specification, he said, that requires minimum performance between 0-60 mph and 0-100 mph. A standing start that means business is the highway patrolman's greatest need. "And that's the [reason] we used to buy the Mustang," Cochrane said.

AHP Mustangs acquitted themselves pretty well. Grable drove Brian LeDuc's fully marked '89 patrol Mustang, complete with light bar, to a 2nd-place top speed of 132 mph. This was a fresh-from-the-motor-pool police Mustang with

The nightmarish full-court press bearing down on the Corvette ZR-1 demonstrates that the pursuit of automotive pleasure takes many forms. In this particular match-up, however, the ZR-1 is the hands-down victor. It seems likely that ZR-1s will see some form of this image in a *rearview mirror*.

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under 300 miles on its clock, too. A match run in a vanilla AHP Mustang returned the yardstick figure of 134 mph, but the run was for comparison only and not a part of the test. The absence of the light bar helped improve airflow over the unmarked car, but removal of the chrome spotlight would also have added several more mph.

In addition to Arizona, highway patrol and state police agencies in several jurisdictions, including California, Florida, and Georgia, use the 5-liter Mustang LX for pursuit work. The Mustang has performed admirably in this role, cops say, but they're already looking at bigger guns down the road. Cochrane has a small test fleet of police-marked '88 Ford Thunderbirds with the '89 supercharged 3.8-liter V-6 installed from our Car of the Year, the T-Bird SC. He and Ford sources tell a story about the AHP patrolman who, while going home in one of these cars (most officers have "take home" cars), hauled down a speeder going the other way at over 140 mph. Fully marked '89 Super Coupes are on duty now with the police department in Ford's hometown of Dearborn, Michigan, and the Wayne County Sheriff's Office near there is evaluating marked police-equipped Tauruses for traffic duty.

Cops like the high-performance police cars. A lot. "It's an excellent police vehicle," Cochrane said of the supercharged Thunderbird. "The comments I've heard from our people are that it cuts down on the amount of pursuit time because it reaches top speed so fast." Other police packages will undergo testing in Arizona's crucible. By the time you read this, the AHP will have put in service a '90 Probe powered by the Taurus' 3-liter V-6 engine. The department expects to see a redesigned '91 Crown Victoria and a '91 5.7-liter Caprice soon.

A standing start that means business is the highway patrolman's greatest need

The Border Patrol's experimental police cars are being written up now, with the critique reported to the federal agency's Washington, D.C., headquarters for evaluation. If the innovative program is deemed successful, it may be expanded to include other outposts with long stretches of highway. The precedent established is expected to encourage other police agencies to adopt these aggressive high-performance cars as pursuit vehicles. Police work could actually become one of the most attractive refuges for the enthusiast driver.

* * *

It took us three hours to apprehend the suspect with aircraft support, but we got the vehicle right away. It had 208 pounds of marijuana and 32 pounds of cocaine in its trunk. The street value of the drugs was estimated at $1.9 million. I'd say the Road Runner program just paid for itself. MT

The Electronic Cop

Electronics and computers have had an enormous impact on improving police-officer efficiency and safety, though not necessarily in the nature of the movie "RoboCop." The in-car computer terminal is the best example.

The Mesa Police Department uses a Custom Electronics Model DXT Mobile Data Terminal (MDT). It interfaces with its own Motorola radio unit secured in the police car's trunk. Officer John Bollman can learn more about you than you might imagine without even getting out of the car—including such esoterica as the lender on you car loan and the outstanding balance on the loan at the time the car was registered.

Inputting a vehicle license plate number at the terminal transmits the data to Mesa's Computer Aided Dispatch (CAD) system. The query automatically links to data banks managed by the state of Arizona (Arizona Crime Information Center, ACIC) and the FBI (National Crime Information Center, NCIC). If the vehicle is stolen or wanted for any reason, Bollman will get an almost instantaneous return of the record, even if the subject plate is out of state. This information is an obvious benefit to a policeman walking up to an unknown vehicle. A subject's driver's license can be checked the same way.

The bottleneck in all the computer wizardry is itself computer-related. Example: If you're stopped in Arizona and the officer is checking your Michigan license, the information return can be short-stopped by computers broken down anywhere in the link. Most queries are answered in 2-3 minutes, according to Mesa police official Bruce Reynolds, but peak demand periods can slow down response times considerably, and phone lines still aren't as infallible as Ma Bell would have us believe. Individual wants and warrant information are still readily available due to certain file sharing between NCIC and ACIC, but routine vehicle queries might take so long that the officer could release you even if your license is suspended.

The MDT provides other interesting support, too. Many trouble calls are dispatched to officers on the MDT's encoded data link, ensuring reliable communications security. The terminal has a Hazard Button, a one-touch cavalry call to request immediate assistance. The CAD system maintains a Hazard File of locations where trouble has often occurred previously, so when the cop gets the call, he's automatically notified on the MDT of any known or potential danger.

Other interior appointments are police-standard. The hand-held voice radios Mesa uses are General Electric. Because of the extremely hot summers in the Southwest, virtually all major agencies equip their patrol cars with air conditioning when it isn't supplied as standard equipment. Standard-equipment civilian-band radios are permitted, and the steering and brakes both are power-assisted.

The electronic cop likes these toys. Bruce Reynolds says the terminals were deemed expensive luxuries when they were introduced 10 years ago, but are considered indispensable today. Officers can also use the MDT's secure capability for car-to-car communication, a terrific tool for information exchange.—*DCR*

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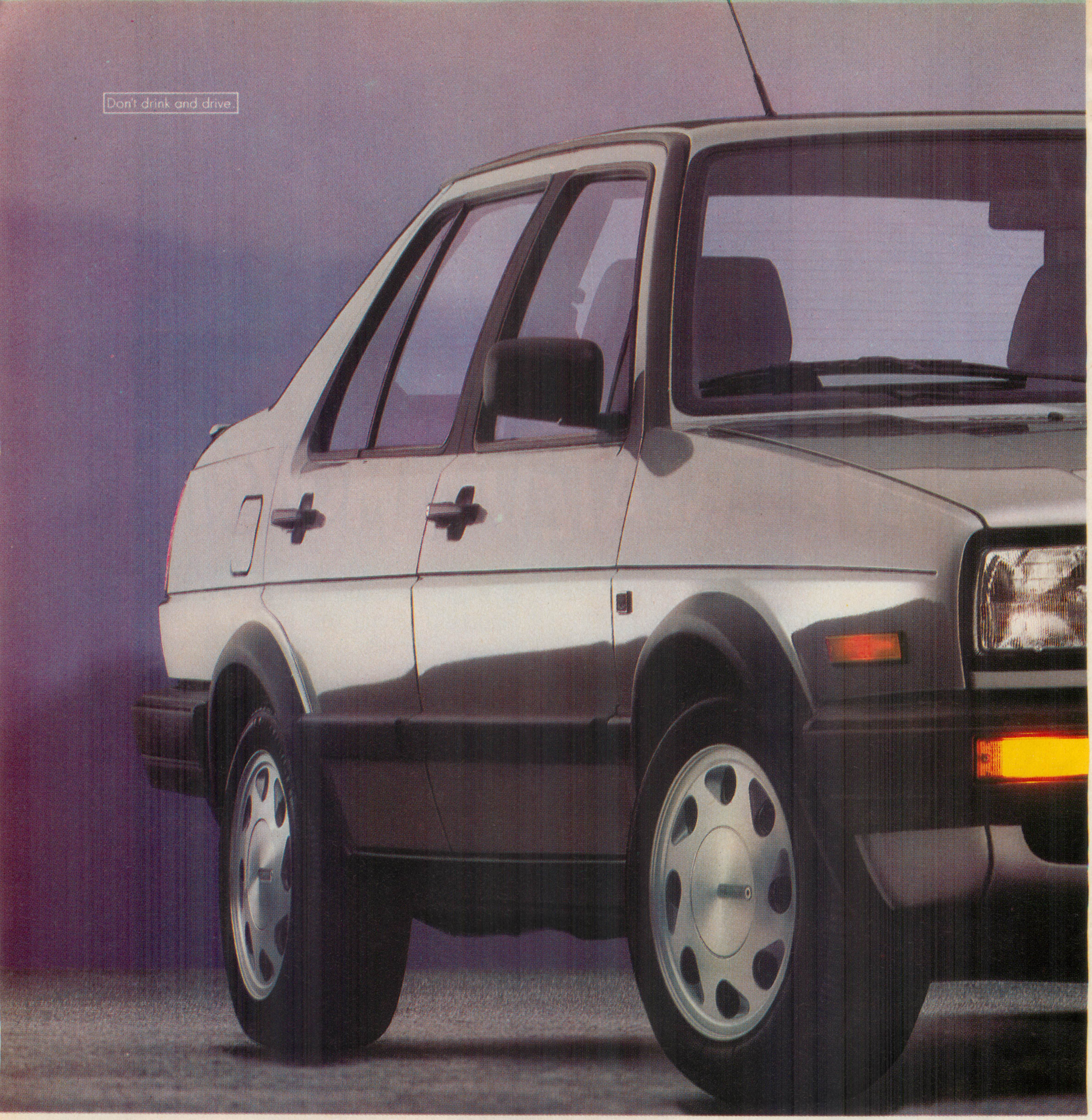

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Mercedes-Benz 300/500SL

New sinew beneath a tightened skin

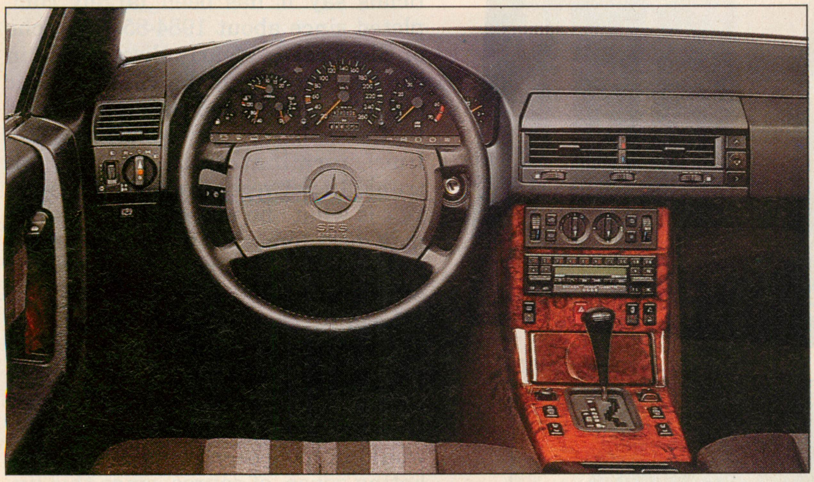
by Daniel Charles Ross

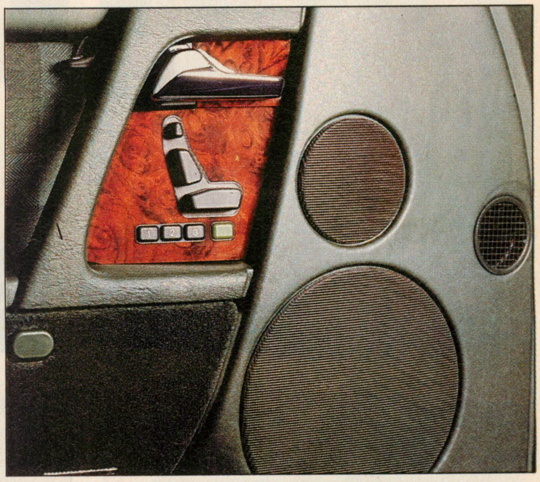
On paper, the figures make the new roadster the hottest Mercedes rod since the dawn of AMG

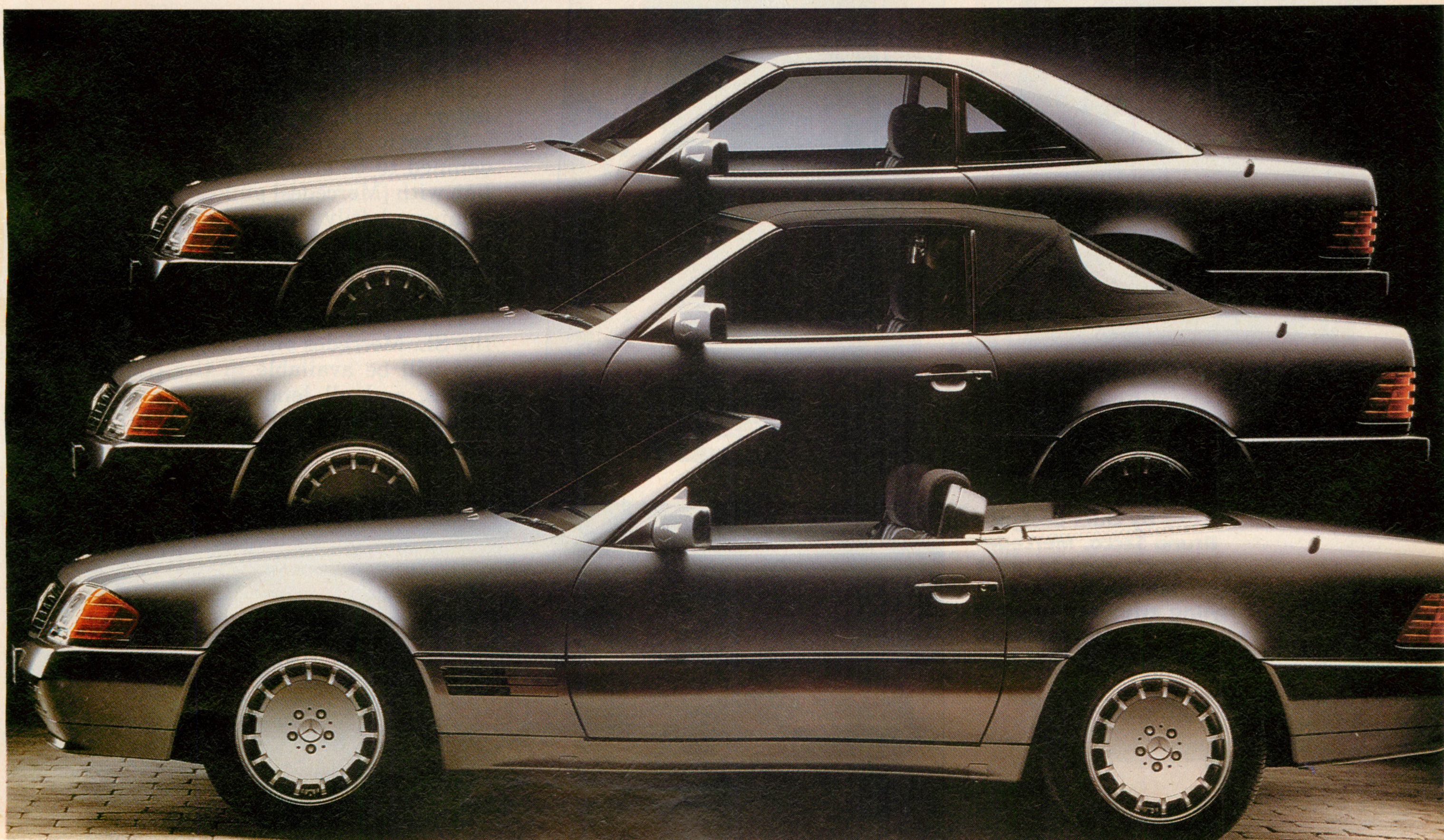
It's taken Mercedes-Benz about 18 years to step up to a makeover of its wildly popular yet staid roadster, known currently as the 560SL. When the new-generation 300/500SL debuts this summer and fall, you'll definitely recognize the historical character implicit in the freshened automobile. What you won't recognize is the infusion of hormones that, on paper, makes the new roadster the hottest Mercedes rod since the dawn of AMG. The SL has experienced an epidermal transformation intended to replace the old with the familiar, a skin-tightening procedure worthy of the finest cosmetic surgeon. A new smart suspension and potent new engines are the sinew beneath the skin.

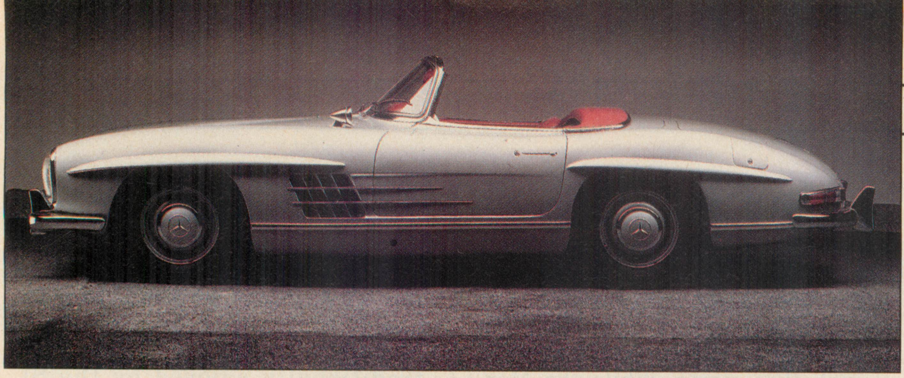
The Mercedes SL is often thought of as the pinnacle of the super-sport/luxury pyramid. That catbird seat was probably crowded last year by the Cadillac Allanté, incredible though that seems. While the Mercedes SL has always been prized for its distinctive style and snob appeal, artifically reinforced by a high sticker price, it has slipped a few notches over the years in the styling and technology departments through sheer age. Mercedes spokesmen readily acknowledge that 18 years is a long time for essentially the same sheetmetal. It was long enough for Cadillac to have cloned an SL of its own.

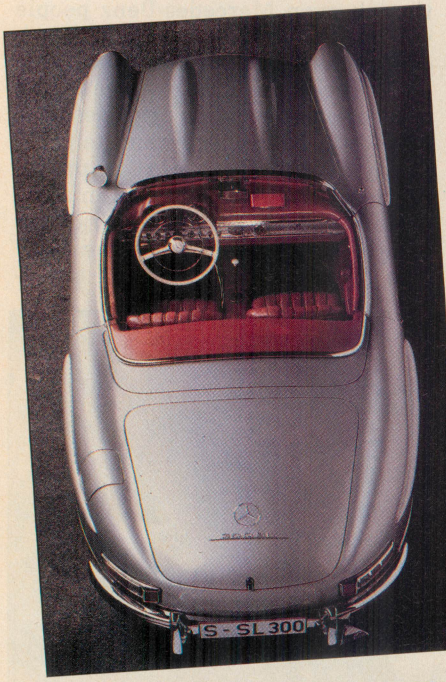
The Allanté has proved no sales match for the 560SL. Astute buyers of such cars now recognize the '89 Allanté's primary imperfection: Demand for new Allantés is too mild to nurture the aggressive resale value traditionally enjoyed by the SL, though even Mercedes-Benz people will stiffly utter some snide acknowledgement of the Cadillac's upstart appeal. Technical improvements and suspension and engine upgrades have helped the Mercedes retain its popularity, but incremental improvements really are immaterial in a discussion of the SL. No other car of any competitive appeal wears the Star. The Merc has that coveted three-

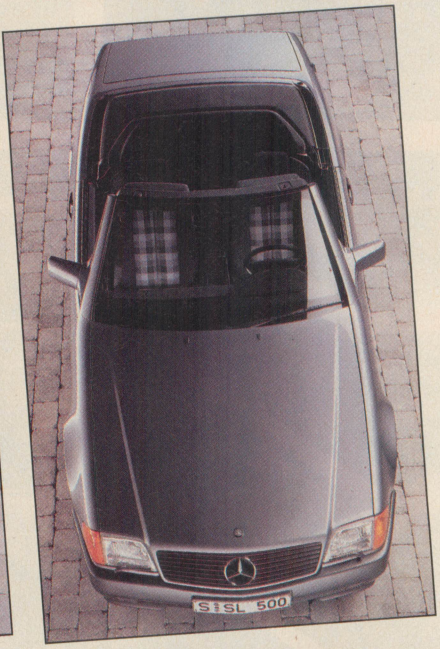












pointed emblem. That's all it needs to thumb its nozzle at a "simple Cadillac," however well done.

Yet Mercedes planners haven't been sitting on their hands. Whether the new series SL roadster displaces the Allanté as best-in-class or merely joins it there depends on judgement after drive-time in the Mercedes. The Merc, however, is undeniably tough, first-cabin competition in a small ballpark of highly talented stars. It just needs to hit some homers now that equally talented draft choices are beginning to show up from the darnedest farm teams.

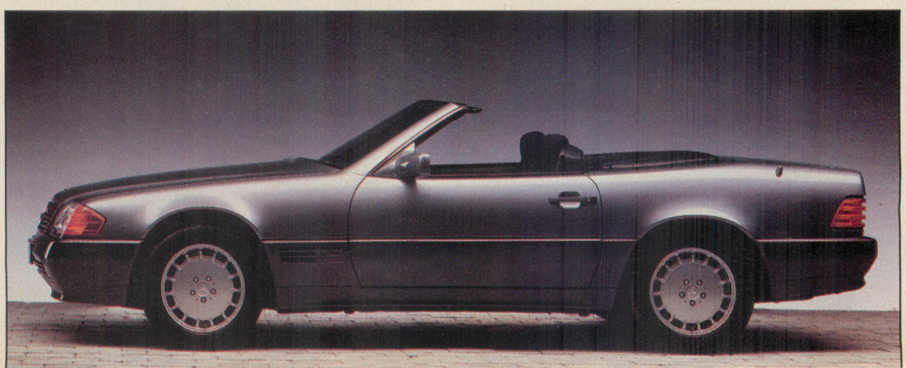
The car you see here will restore the SL's softened luster. Mercedes officials say it has been largely completed since about 1984-85. The echo of SLs past is clearly discernable in the new car, from the characteristic grille treatment and classic long hood to the rearward sweep of the SL's lines, terminating in a short, tall trunk. In between, the Mercedes interior is what one expects from Germany's most famous purveyor of luxury automobiles, offering traditionally conservative Mercedes-Benz comfort.

Lead by chief designer Bruno Sacco, Mercedes architects purposely attempted to preserve the visual heritage of a line of SLs that originated 35 years ago. To abandon this history wouldn't have been prudent in a marketing sense, of course, since this lineage actively enchants many SL customers, especially Americans. Nonetheless, Mercedes has never been accused of slavish devotion to current fad or fashion, anyway.

"Exotic fancies of shape, condemned to be short-lived, are not in line with [Mercedes] philosophy," the company loftily asserts. "Concessions in this respect would have meant to sacrifice the marque identity and the SL image."

Three engines will be offered for the SL. Mercedes officials think only two will be available in the United States, and all lend their displacements to the model designations. If the SL line in Europe and possibly

Lead by chief designer Bruno Sacco, Mercedes architects went to great lengths to preserve styling echoes of the first SL, 35 years ago.



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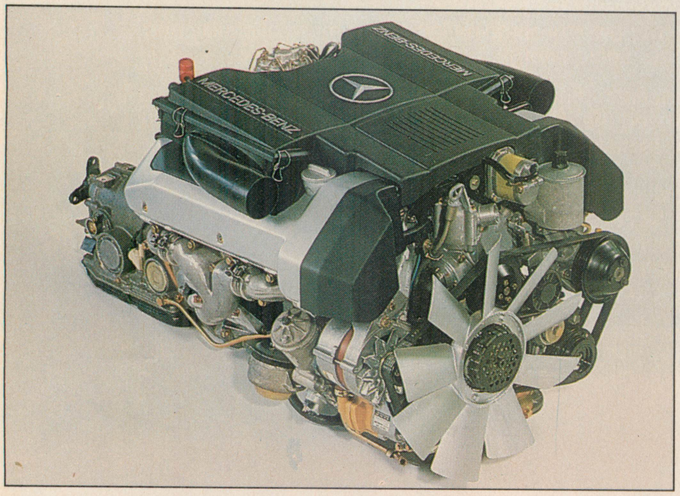
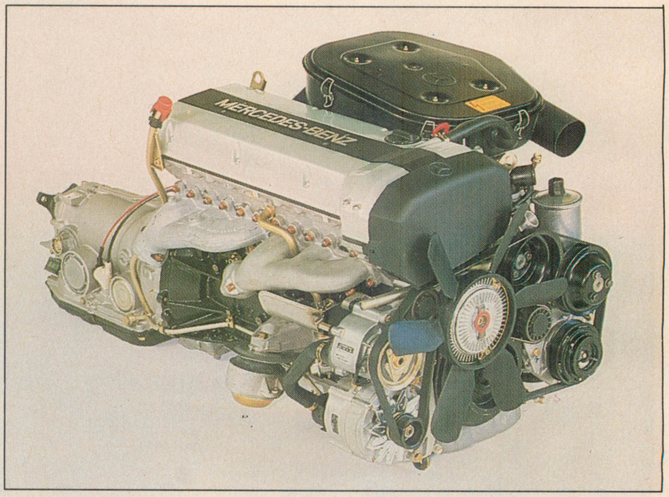


This 5-liter 4-valve V-8 engine is the designated weapon of choice. It powers the high-end 500SL with 326 hp.

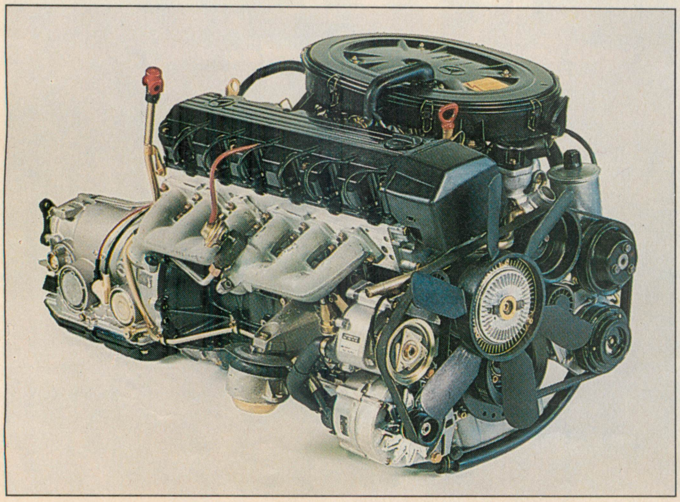
in the luxury car segment. Mercedes says the high-performance 500SL could effortlessly rocket to beyond the car's top speed of 156 mph (250 kph), but in the interests of safety, primarily concerning tire performance at high speeds, the top speed must be artificially capped via electronics in the engine computer.

The exciting 32-valve 4-cam 5-liter V-8 is a new 4-valve derivative of the M-117 S-class engine. All-new cylinder heads were developed, with two intake cams and two exhaust cams operating the valves via hydraulic bucket tappets. The cams are driven

elsewhere can be considered to have a so-called "entry level" model, it will be a 300SL offering a 3-liter inline six engine of 190 hp and 12 valves, two per cylinder. In the U.S., the 300SL-24 DOHC 3-liter inline six will have two intake and two exhaust valves per cylinder, boosting the peak horsepower significantly to 231. The 500SL will feature a 5-liter 4-valve/cylinder V-8 engine, a high-performance, 4-camshaft unit offering a maximum horsepower output of 326. This is a thundering volley in the unprecedented horsepower war just budding



The 300-24SL is believed to be the entry-level Merc for the U.S. Its 4-valve 3-liter inline six produces 231 hp.



The entry-level 300SL offers a 190-hp 2-valve inline six of 3 liters. The car likely will be available only in Europe.

by a duplex roller chain. Each cylinder has a separate oil return passage in order to provide a higher oil flow rate in the 4-valve cylinder heads. Two oil splash shields in the sump reduce foaming, potentially dangerous to the bucket tappets. The pent-roof combustion chamber is compact, and centrally located spark plug placement optimizes flame propagation and thorough combustion.

An all-new electronic fuel-injection system called the KE 5 was created for the engine. It has greatly expanded computing power and additional engine management functions, including the ability to "network"

continued on page 140

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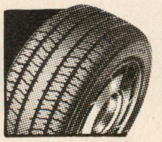

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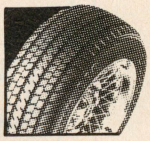

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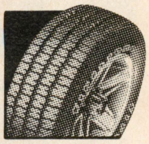

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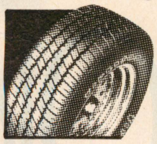

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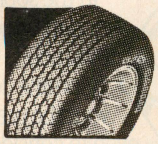

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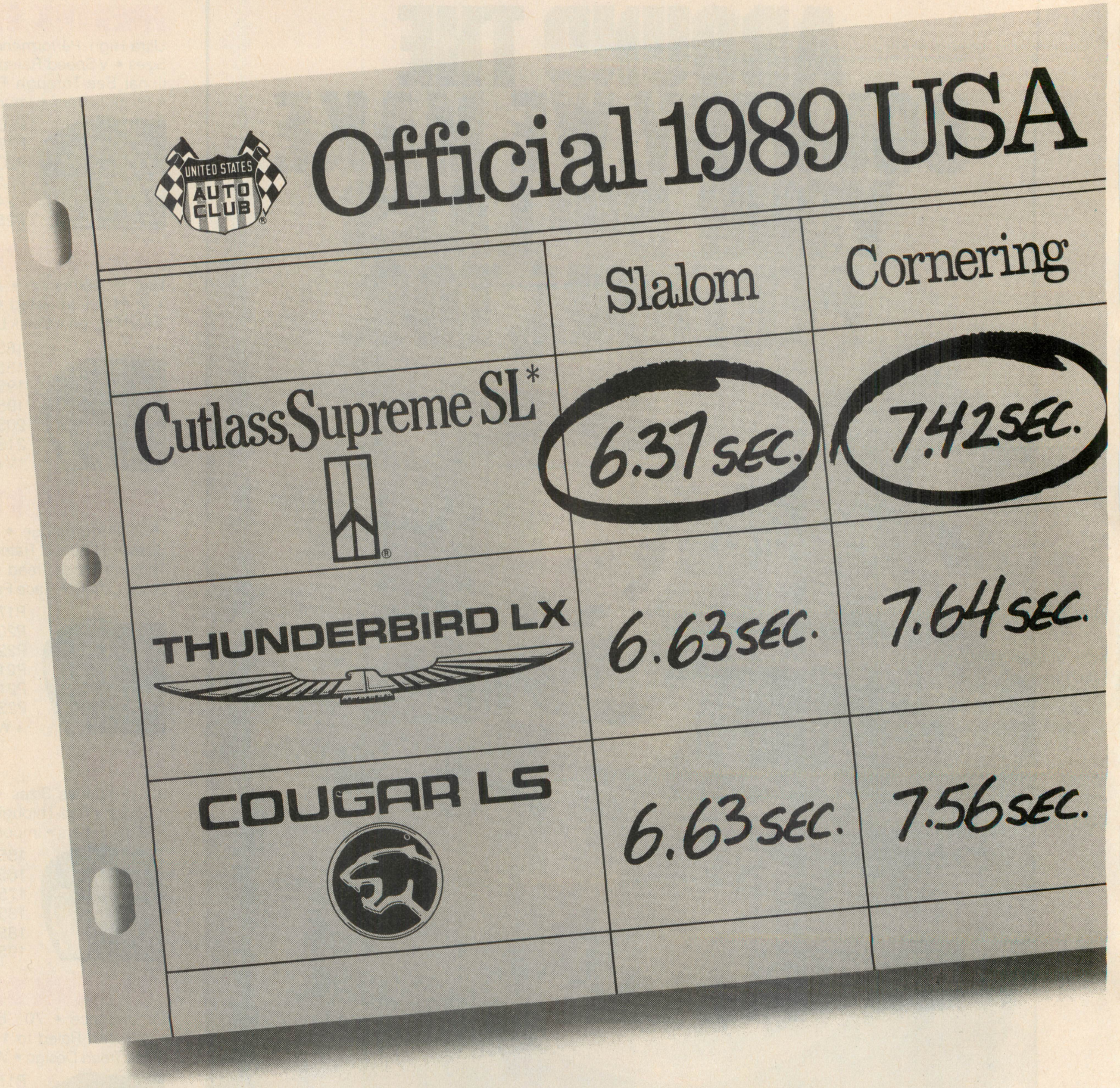

Oldsmobile: five.

In the sophisticated world in which the new Oldsmobile Cutlass Supreme competes, it would be presumptuous even to consider singling out any one car as "The Best."

So when a Cutlass Supreme SL, equipped with the optional FE3 suspension, was pitted against the new Ford Thunderbird LX and Mercury Cougar LS in five recent USAC tests,* it was logical to assume, as the saying goes, "They'd win some, and we'd win some."

They didn't win any.

Borne off the line by a new 3.1-liter V6, Cutlass Supreme outpowered them from zero to 60.

It beat them handily through the slalom course, its optional FE3 suspension taking the pylons in textbook form.

In a test of passing power, it readily out-accelerated them from 40 to 65 mph.

On the skidpad, it stuck like flypaper, pulling 0.83 g's to easily best their lateral acceleration capabilities.

And in a test of braking, it stopped 13 feet shorter than Thunderbird— 16 feet shorter than Cougar.

Rarely does a battery of tests come out this overwhelmingly in favor of one car. A fact that, in itself, probably says something about the rarity of a car like the new Cutlass Supreme.

And no matter how you grade a car's

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Let's get it together ...buckle up.

C Test Results

Braking	40-65 Passing	0-60 Acceleration
148.74 FT.	6.44 SEC.	9.36 SEC.
162.32 FT.	6.87 SEC.	10.46 SEC.
165.49 FT.	6.81 SEC.	10.33 SEC.

*with optional FE3 suspension.

Ford: zip.

performance—whether by stopwatch and lateral g-forces like USAC, or when passing a semi and winding through the mountains like the rest of us—we feel that *this* car will do well every time. It even won a test USAC didn't conduct. In complete car coverage, its 3-year/50,000-mile Bumper to Bumper Plus warranty** can't be beat. And it's priced $1,200 less than Thunderbird LX—$200 less than Cougar LS.†

For more information about the car that swept the USAC tests, call toll-free, 1-800-242-OLDS, 9 a.m. to 7 p.m., EST. Better still, stop by an Olds dealer where you can arrange a test drive of your own. We think that even if you don't take it to the skidpad, you'll be impressed.

*USAC tests based on comparisons of Cutlass Supreme SL with optional FE3 suspension and Ford Thunderbird LX and Mercury Cougar LS.

**See your Oldsmobile dealer for terms of this limited warranty.

†Based on MSRP's of cars as tested by USAC. Levels of equipment vary.

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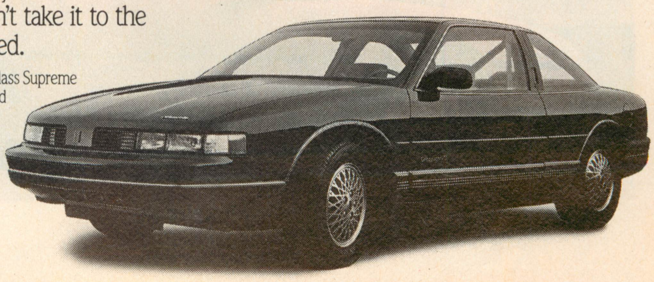


Great marques are made, not born, and most often the process is long and arduous. But with a healthy infusion of the right stuff, *it's possible* to short-circuit the maturation process considerably. The Acura line, which appeared in 1986 out of the Honda stables, is rolling proof. While it didn't exactly hit the ground running, it certainly managed to land on its feet—trotting at a pretty good clip. By 1987, it had become America's best-selling luxury import nameplate. With sales of 128,238 last year, it retained that enviable status. Projections are for about 150,000 units this year, thanks in large part to the all-new Integra, which should continue to share nearly equal volume with its big brother, the Legend.

Committed to a logical extension of the original concept, the Integra design team focused on increasing sportiness, performance, and driveability. Although slightly longer, lower, wider, and with a modestly stretched wheelbase, the second-generation car retains all the enthusiast qualities that made the original such a favorite. Adding a tad more gild to the lily is a new top-line GS variant to complement the existing RS and LS models.

The Integra's new exterior styling retains the clean look of the original, albeit with decidedly softened contours. Its low-nose/high-tail "I-was-born-in-a-wind-tunnel" lines can best be described as contemporarily conservative, with the coupe and sedan meriting a 0.32 and 0.34 Cd, respectively. The new formal 4-door that replaces the hatchback sedan is certainly more adventurous, its handsome profile set off by the presence of sashless front and rear doors. With a cargo capacity of 16.2 cu ft in the hatch and 11.2 cu ft in the sedan, there's no shortage of useable space. However, a few points must be deducted for the relatively narrow decklid opening and tall liftover height.

That old CAD/CAM magic was definitely at work in the design process, bolstered by NASTRAN, a structural stress analysis program originally written for NASA. Although the total glass area is increased 8.5%, the new Integra unibody possesses 30% more bending rigidity and 90% more torsional rigidity than the previous Inte-

The curtain goes up on Act II of a modern-day success story

1990 Acura Integra

by Bob Nagy

PHOTOGRAPHY BY BOB D'OLIVO, PETERSEN PHOTOGRAPHIC

The new car retains all the qualities that made the original such an enthusiast favorite

gra's shell.

Basic suspension layout on the new Integra was derived from the Civic. Save for a slight difference in spring rates between the coupe and sedan models, tuning is the same. Honda's hybrid twisted double wishbones with coil springs are found at each corner, and anti-roll bars appear fore and aft. While the design is familiar, all components are new. The latest iteration affords improved anti-dive and anti-squat characteristics and better control over camber and toe changes when cornering. Total travel has been increased on the gas-pressurized shock absorbers. The fronts get an improved sealing Teflon piston ring and dual-stage valving that decreases internal friction and wear while augmenting damping action.

The new platform was also fitted with a much improved standard power-assisted rack-and-pinion steering system. Still vehicle-speed sensitive, it has a more positive feel and is considerably more linear in transition, with minimum boost occurring at 35 mph. This is a major advance and one we hope to see incorporated throughout the entire Honda/Acura product mix. As in the past, the use of equal-length halfshafts virtually eliminates the effects of torque steer. Wheel/tire combinations were mildly upgraded for the '90 model. All Integras get 195/60 steel-belted radials on 14x5.5-in. wheels, but the LS and RS wear HR-rated rubber on steel rims, while the GS is fitted with stickier Michelin XGT-Vs on cast alloys.

The Mk II Integra carries an all-new engine underhood. Still an all-aluminum DOHC 4-cylinder, displacement has been upped from 1.6 to 1.8 liters, the result of increasing the bore from 75 to 81 mm and decreasing stroke from 90 to 89 mm. The new powerplant shares many basic design characteristics, but no common components, with its predecessor. The revised head retains a 4-valve pent-roof configuration, but breathes more freely thanks to bigger valves and a new high-velocity intake manifold with narrower, shorter runners. Valve timing has been modified to optimize the effects of this new inlet system. The new engine block is slightly longer, with bore centers extended 6 mm to 90 mm. Although lighter by 1.5 kg, its integral oil gallery, wider main bearing webs, and

Egregious driver errors tend to elicit only minor retribution

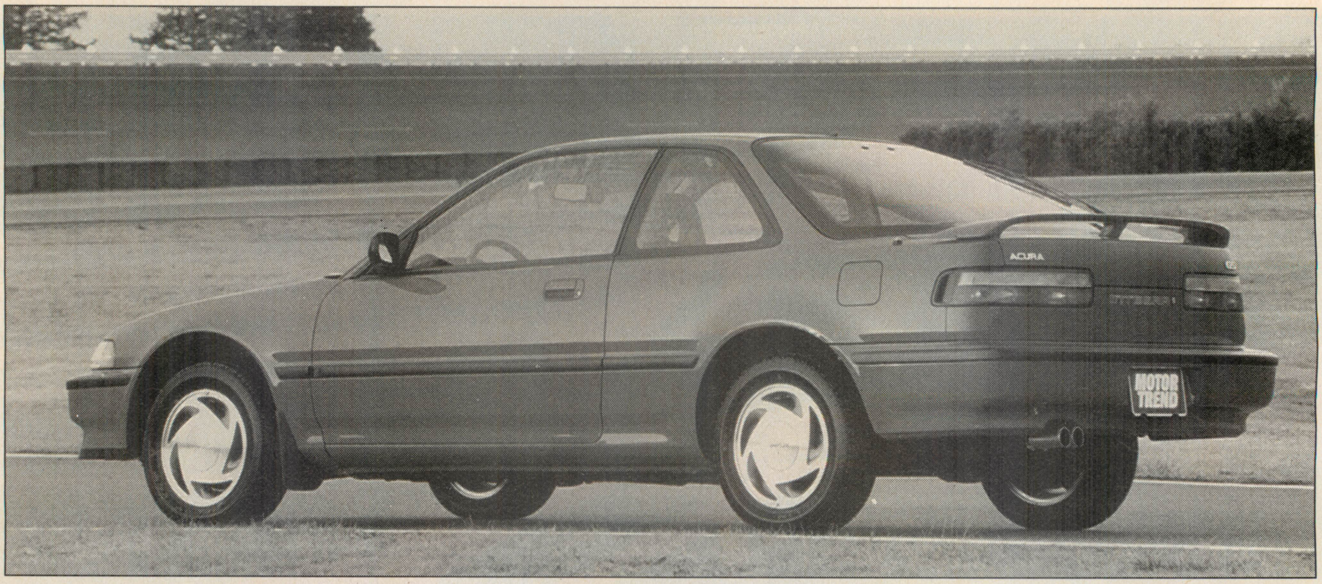
longer cylinder skirts combine to make it stronger. A stiffer crankshaft also increases overall rigidity. Crowning the new engine is Honda's PGM-FI electronic port fuel injection. It, too, has been subtly tweaked to improve throttle response.

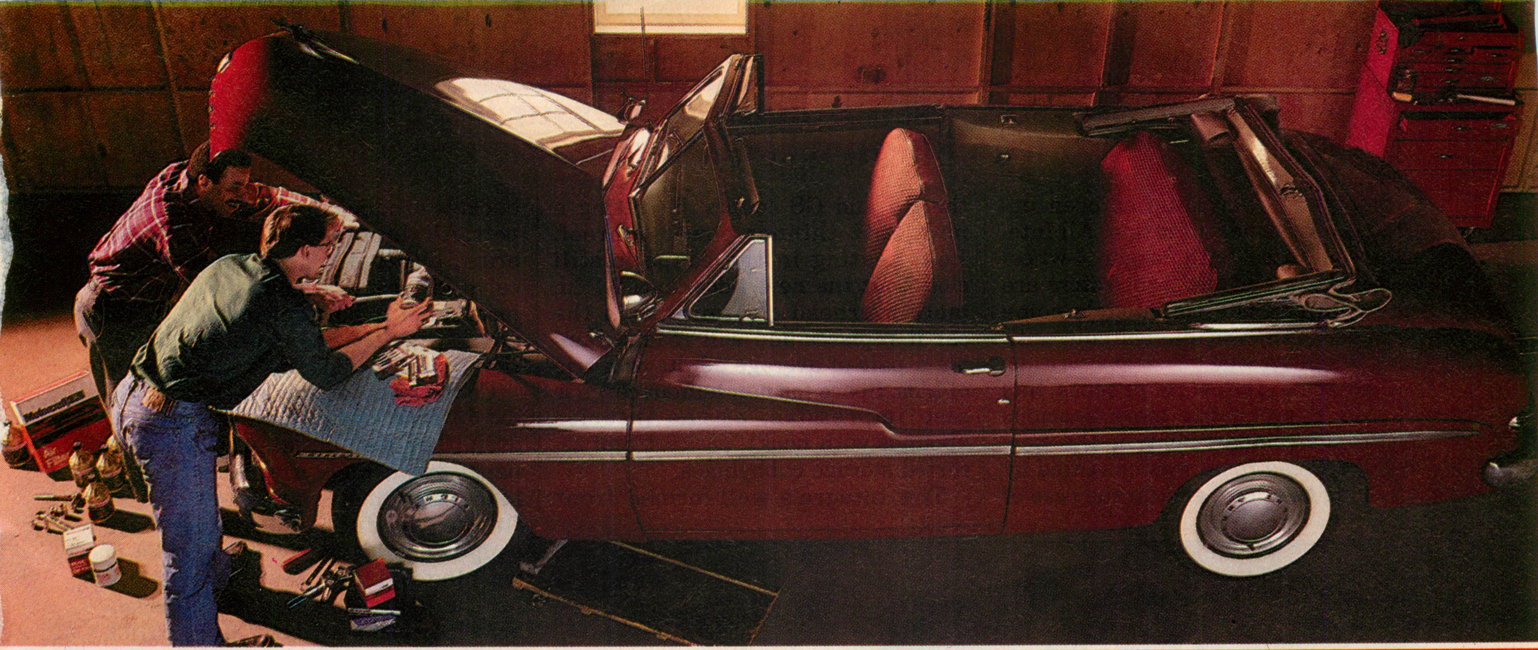
Along with more displacement comes more punch. Power is up 10%, to 130 hp at 6000 rpm. Torque also rises by 17.5%, to 121 lb-ft at 5000 rpm, with 85% or more of that available between 2000 and 6000 rpm. An eager revver, it will happily buzz to its 6500-rpm redline and beyond. Those hoping the pony count would have been raised even further, take heart. Although Honda's newly developed variable valve timing technology will only be used on production cars in Japan next year, we could well see it turn up here on a high-performance Integra model by 1991 or 1992.

The Integra offers the choice of two new transmissions. The commuter cadre is likely to opt for the smooth-shifting electronically controlled 4-speed automatic with lockup converter that provides both normal and sport settings. Our favorite, though, is the new 5-speed. Stronger than the box it replaces, it has a stiffer case, beefier synchros, and slightly higher ratios in 3rd, 4th, and 5th. But the precision Honda linkage remains intact. Power transfer is also improved thanks to a larger-diameter clutch and a new flat-roller tripod driveshaft joint that cuts third-order vibrations while further limiting torque steer effects.

Acura Integra Comparative Dimensions 1990 vs. 1989

	Coupe	Sedan
Wheelbase	100.4 in. (+3.9 in.)	102.4 in. (+3.2 in.)
Length	172.9 in. (+4.7 in.)	176.5 in. (+5.0 in.)
Width	67.4 in. (+1.8 in.)	67.4 in. (+1.8 in.)
Height	52.5 in. (- 0.7 in.)	52.8 in. (- 0.1 in.)





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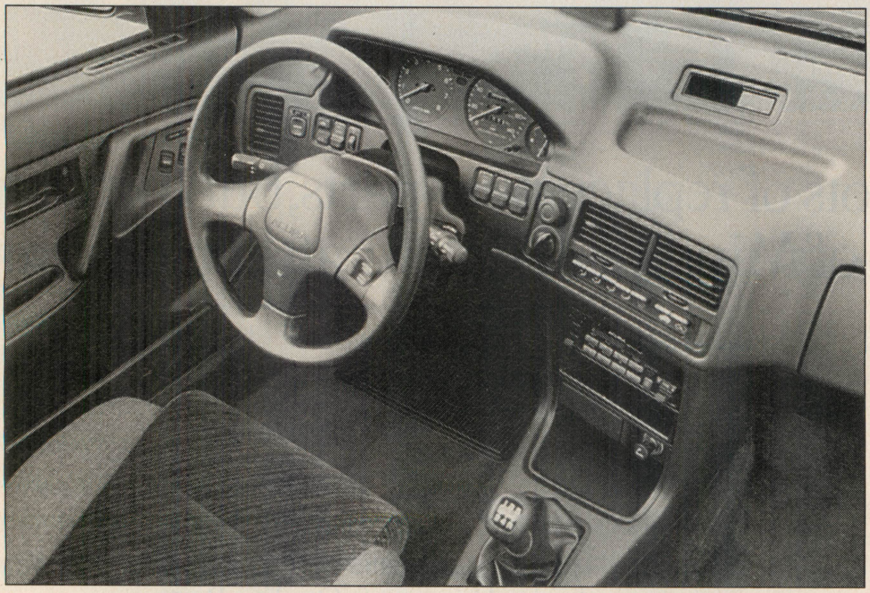
An eager revver, the 1.8-liter DOHC four happily buzzes to its 6500-rpm redline and beyond

Stopping power also has been upgraded for the new iteration. All Integras are fitted with larger 4-wheel power discs, and the front rotors are now vented. The GS models come with Honda's own dual-circuit antilock brake system.

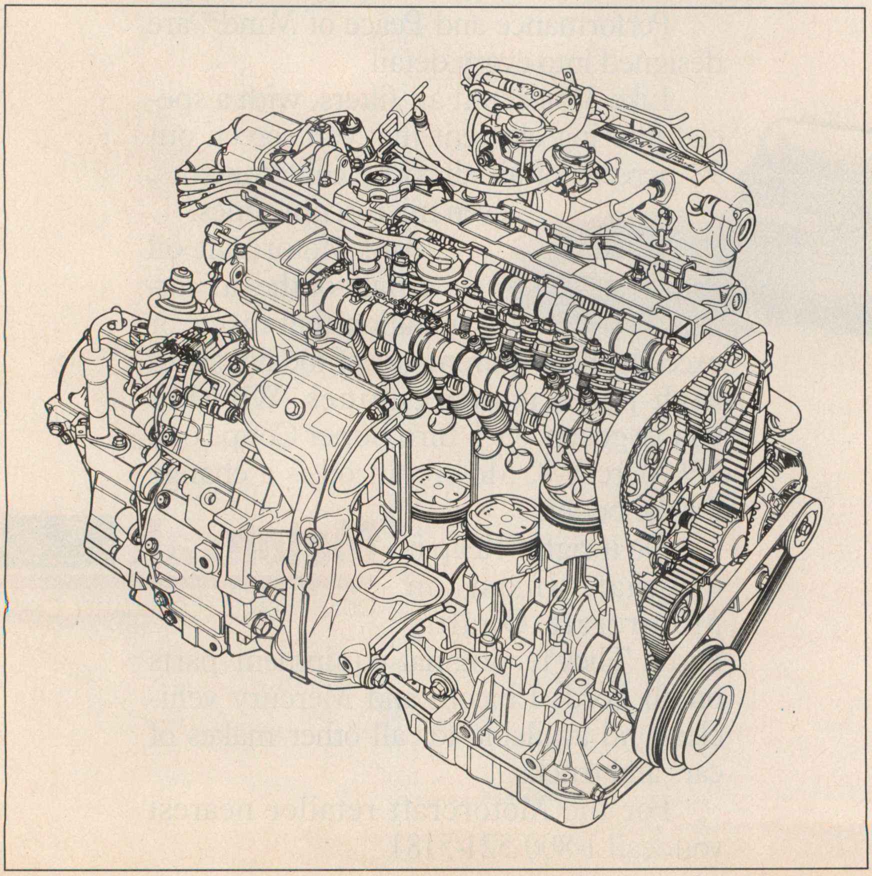
The total redesign process has yielded a noticeably more spacious passenger compartment in the new Integra. Head room was increased by lowering the floor, and, in the case of the RS and GS coupes, by fitting a new, 25% thinner power sunroof. Rear seating in the coupe is still close, but the new 4-door has 2.1 in. more overhead clearance than the car it replaces and will readily handle a pair of average adults or a trio of kids. Space for non-human cargo is also impressive, as the interior abounds with nooks, pockets, and assorted storage cubbyholes.

The Integra's well-formed front buckets are long on comfort and support. All three models have cloth covering, although the GS variants receive different trimouts and get adjustable side bolsters for the driver along with the standard multi-position lumbar support.



Centerpiece of the smartly outfitted Integra cockpit is a wraparound dash. The well-designed instrument panel has a highly legible white-on-black tachometer and speedometer flanked by fuel and temperature gauges augmented by three tiers of warning lights. Twin control stalks for the lights/directionals and washer/wipers are an easy finger flick away, while switches for the fog lights, cruise on/off, panel dimmer, rear defogger, and sunroof are arrayed in two groups of three on either side of the adjustable steering column. About the only things that seem out of place in this understated interior are its sole bits of brightwork, chromeplated doorlock levers.

Since the Integra had not yet been released in Japan when the car was introduced to us, our driving was confined to Honda's Tochigi proving grounds. But with a high-banked oval, full road course, and vast, open paved areas at our disposal, we got a pretty clear idea of how the new Integras will perform in the real world.>



TECH DATA

1990 Acura Integra

POWERTRAIN

Vehicle configuration	Front engine, front drive
Engine configuration	Inline 4, DOHC, 4 valves/cylinder
Displacement	1834 cc (112 cu in.)
Max. power (SAE net)	130 hp @ 6000 rpm
Max. torque (SAE net)	121 lb-ft @ 5000 rpm
Transmission	5-sp. man./4-sp. auto.
Final drive ratio	3.26:1/3.21:1

CHASSIS

Suspension, f/r	Independent/independent
Brakes, f/r	Vented disc/disc, power assist,
Steering	Rack and pinion, power assist
Wheels	14 x 5.5 in., steel/ 14 x 5.5 in., alloy
Tires	195/60HR14/195/60VR14 steel-belted radials
BASE PRICE	Coupe: $12-15,500 (est.), Sedan: $13-16,500 (est.)

Acura focused on increasing performance for the new Integra. The 1.8-liter 16-valve four features a new inlet system, which helps boost available horsepower to 130, a 10% increase over the previous powerplant.

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Dialed Number Display	✓	✓	✓	✓	✓
Electronic Lock	✓	✓	✓	✓	✓
Dual NAM	✓		✓		
Memory Dial	✓	✓	✓	✓	✓
Leather Case, Recharger, Auto Adapter	Standard	Extra	Extra	Extra	Extra
15-Day Money Back Guarantee	✓				
1 Yr. Warranty On Parts and Labor	✓	✓	✓	✓	✓
Price	$495	$1495	$2995	$1795	$1499

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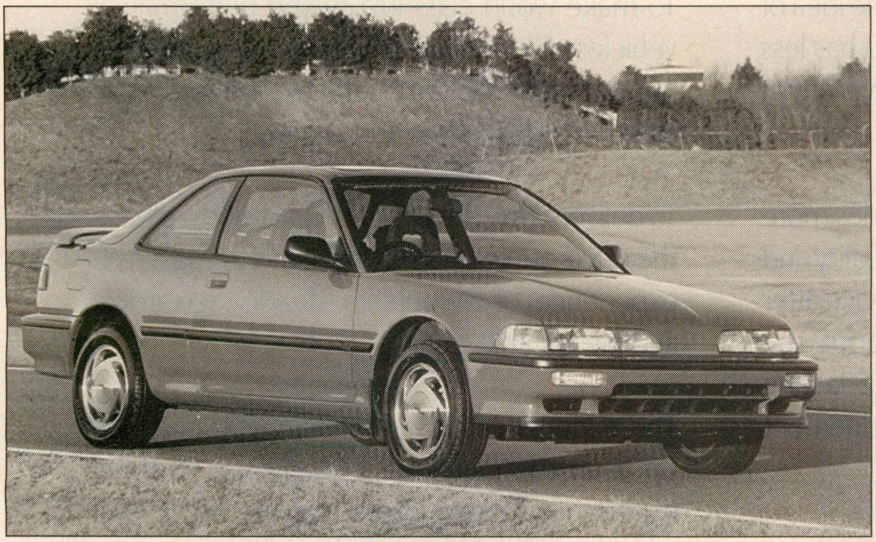
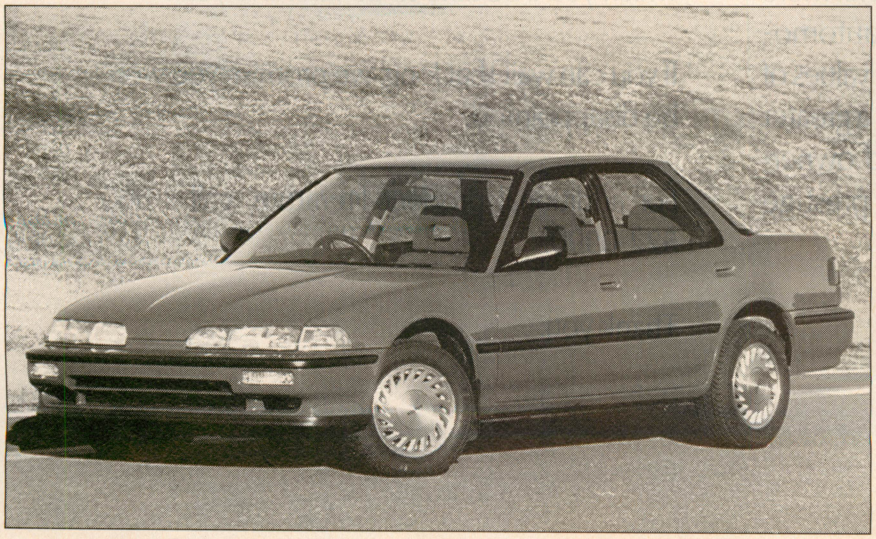
1990 Acura Integra

Our orientation runs included flogging both coupe and sedan models in LS and GS trim over a period of several hours. It was obvious from the start that the new platform represents a genuine advance over the original. In any guise, the new Integra displays an overall benign character. Egregious driver errors tend to elicit only modest retribution. Chopping the throttle midway through a hot corner will cause the nose to tuck and the tail to kick. But recovery is quick, and it's easy to set up predictable drifts. The Integra will push at the limit, but both coupe and sedan feel decidedly better balanced than their 62/38% static weight distribution would lead one to believe.

Without question, the GS coupe stands out as the best handler. Its V-rated tires offer better bite, and despite allegedly identical suspension tuning, the sport variant feels more responsive and easier to drive out of trouble. Up on the high banks, we saw 131 mph indicated at 6450 rpm in a 5-speed model. We also ran some unofficial acceleration times, turning 0-60 mph in about 8.5 sec and the quarter mile in 16.5 sec at 85 mph. An EPA rating 24/28 mpg city/highway (22/26 mpg for automatic models) proves that fun to drive and fuel efficiency needn't be mutually exclusive terms.

The Acura name has resided at the top of the J.D. Power & Associates Customer Satisfaction Index for the past two years. We suspect this iteration will keep right on pressing for head-of-the-class status. Prices had not been set at press time, although the factory estimates the Integra coupe will run between $12,000 and $15,500, the sedan $13,000-$16,500. Lots of quality pieces are currently lurking in that range. Still, our first impression is that Acura has another winner on its hands, formidable out of the box and capable of being upgraded as necessary. We're looking forward to getting a production car for a full road test soon. MT





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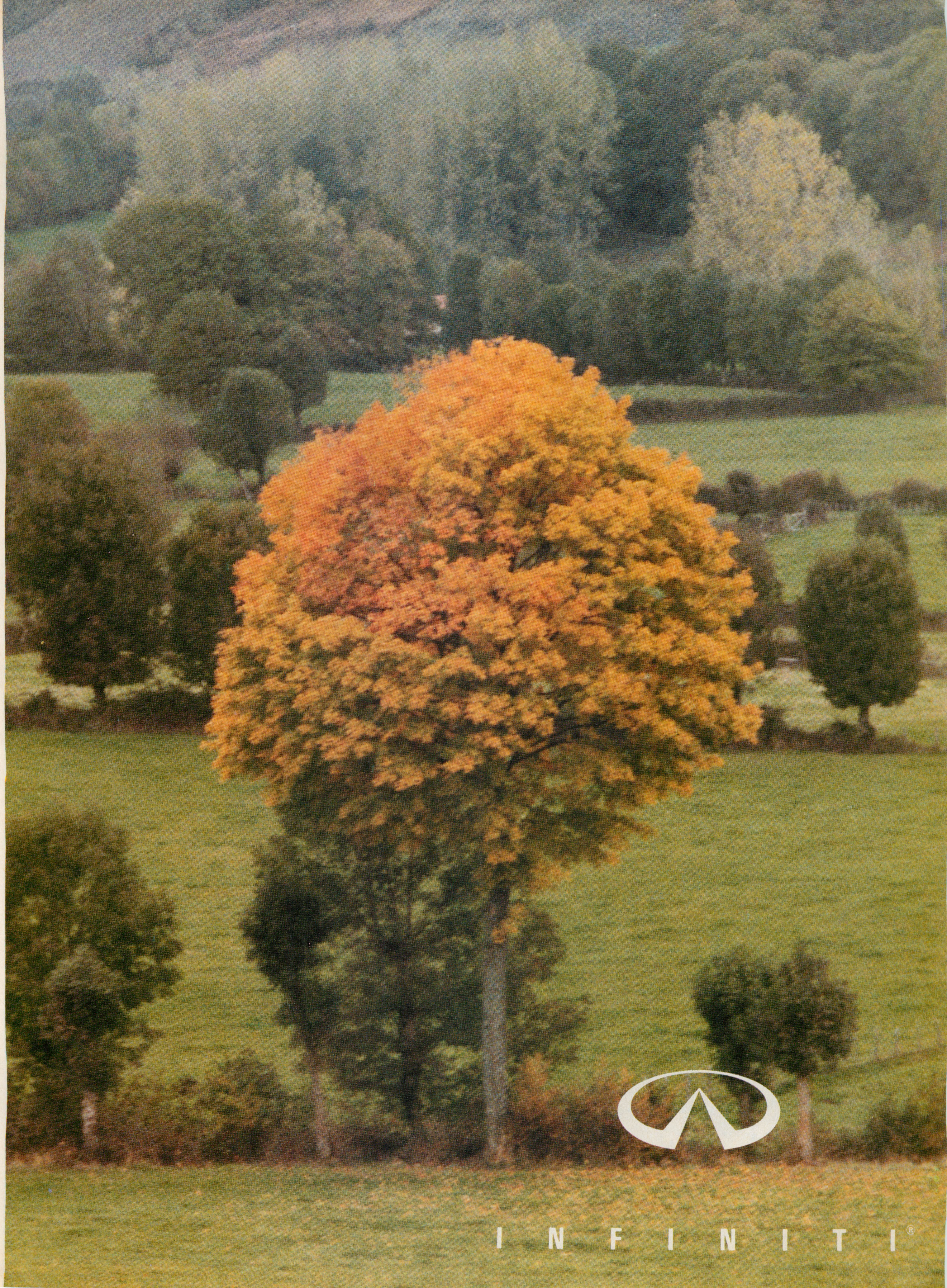
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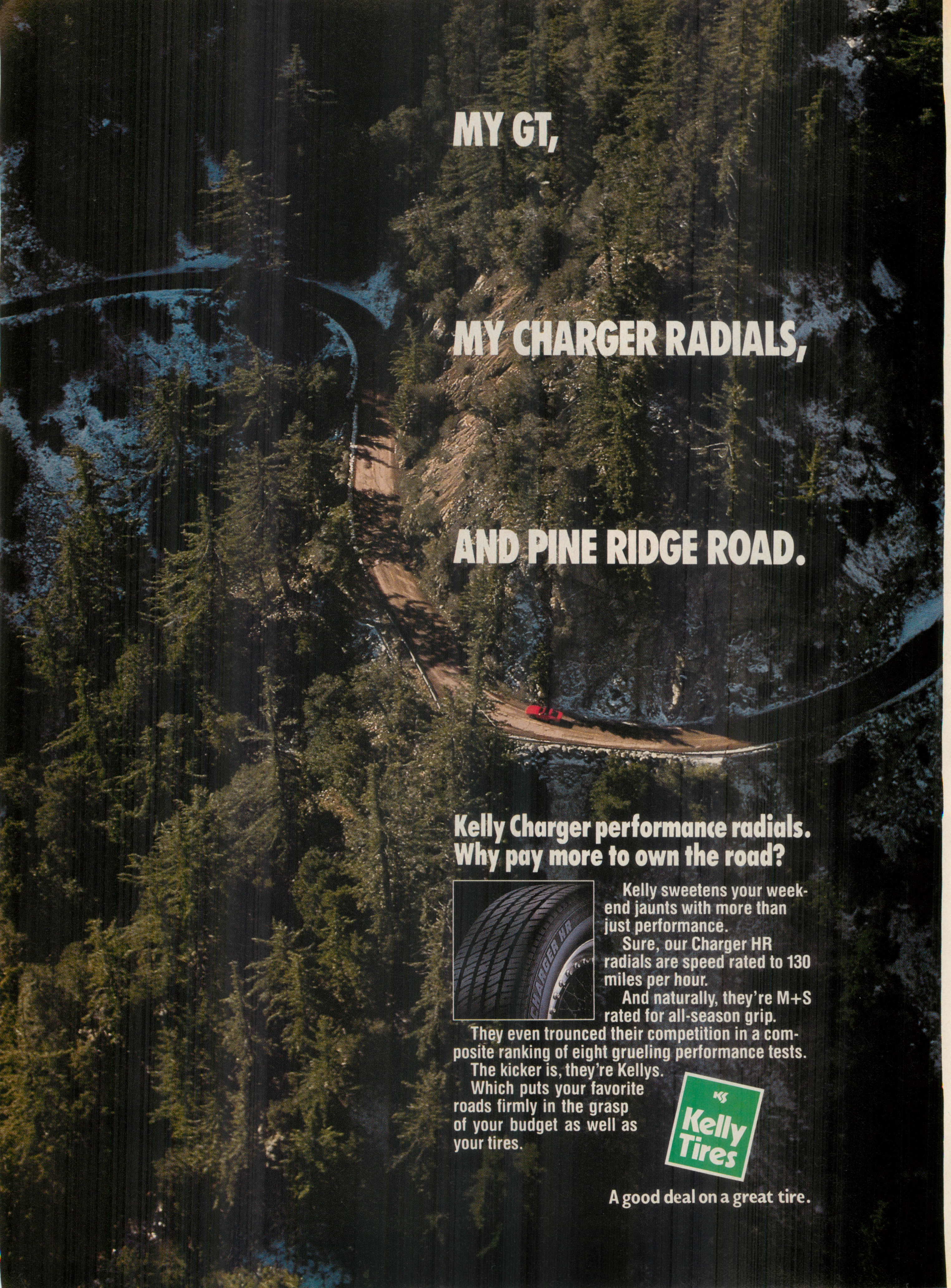
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Hyundai Sonata

More of a good thing

by Dean Batchelor

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When Max Jamiesson, executive vice-president of Hyundai Motor America, told the automotive press at the end of 1985 that Hyundai expected to sell 100,000 cars its first year in the U.S., his announcement was met with polite but ill-concealed skepticism.

C'mon, Max, you're a nice guy and seem to be intelligent, capable, and otherwise on top of things, but we're veteran auto journalists, we know better. Why do you think 100,000 Americans will buy a car from a company they've never heard of? And a Korean car, at that. Some of us have been in this business longer than Hyundai. Give us a break.

We were also told that, while Hyundai Heavy Industries wasn't exactly a household word in the U.S., it was the largest industrial conglomerate in Korea and the 24th largest company in the world outside the U.S. In addition to owning the world's largest shipyard, Hyundai is noted for building railroads, superhighways, bridges, offshore drilling platforms, power plants, petroleum terminals, and for production of locomotives, railcars, chemicals and petrochemicals, industrial robots, cellular telephone equipment, and personal computers.

After Hyundai sold 168,882 Excels

MOTOR TREND ROAD TEST

How has Hyundai done it? Simply by giving a lot of car for the money

in 1986, 263,610 in 1987, and 264,282 in 1988, the skepticism had long since vanished. The automotive press are now firm believers. It should be no surprise that, when Jamiesson tells us he expects to sell 80,000 Sonatas in 1989, we believe him.

How has Hyundai done it? Simply by giving a lot of car for the money. In the beginning, buyers perceived the Excel as a new car, albeit a small one, at a used-car price. They bought Excels (without knowing anything about the parent company's background or the car's reliability) largely because the car looked as though it was screwed together properly.

The fit-and-finish was good; the car was decent looking, if not exciting; and it had a good warranty coupled with a year's free membership in the Cross Country Motor Club so that an Excel owner could call the 800 number day or night, and help would be forthcoming. It probably didn't hurt that many Excel buyers had owned Japanese cars and associated Korean quality with Japanese quality even though the two countries are vastly different.

We'd been told in the beginning that the Excel was only the first of many projected car models from Hyundai, as the management had every intention of developing a full-line car company. The Sonata, introduced early in 1989, is the second car in that series, moving Hyundai up from the sub-compact to the compact car market.

The Sonata jumps headlong into direct competition with the Honda Accord, Toyota Camry, Mazda 626, Nissan Stanza, and Mitsubishi Galant, and somewhat indirect competition with a dozen other makes and models. The buyer's choice has never been better.

Hyundai is promoting the Sonata as having the largest and most powerful standard engine in its class (they're talking torque, though, not horsepower) and the most interior space of any car in its class. In fact, the Sonata has more interior room than any passenger car imported from Japan or Korea.

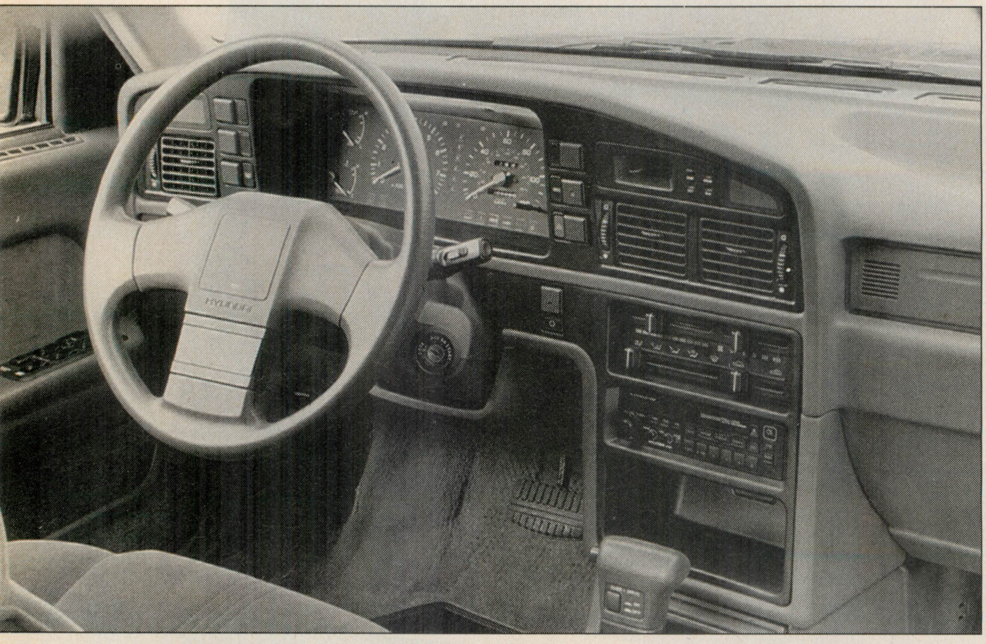
So how does all this translate to real-world use? Pretty well, actually. The Sonata isn't an exciting car, but it wasn't designed to be exciting. It was designed to be a practical, sensible (oops, we've caught the company advertising theme, "Cars that make sense") transportation appliance. Turn the key, start the engine, and go. Every time.

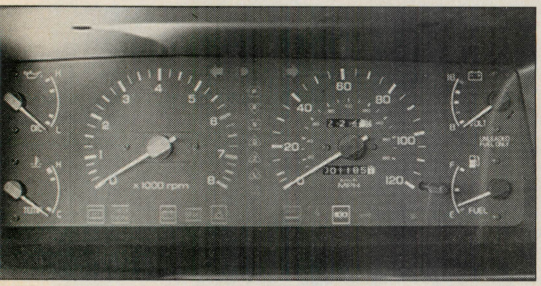
We've examined at least a half-dozen Sonatas and find them well put together: The door, hood, and trunk sheetmetal gaps are even all around; the panels line up with what car designers call good "fair lines"; and any trim fits the body as it should. Sighting down the side of the Sonata, it looks as though it were all built in one piece and then grooves cut for door openings.

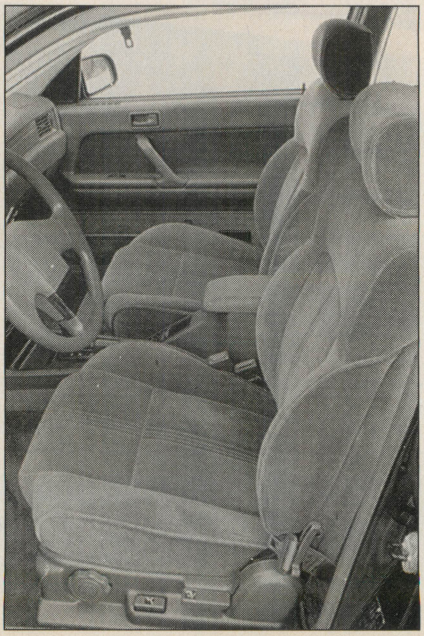
Some of the body paint displayed a slight orange-peel effect, but it was so minimal that it took a close inspection to see it. Interior trim also fit the way it should, with no dangling ends of material or wires to mar the appearance. Again, while not particularly exciting, the Sonata is a car you wouldn't be ashamed to show your neighbors, even though it is an inexpensive car with a base price of $9695 for the 5-speed manually equipped car and $10,305 when equipped with the 4-speed automatic overdrive transmission.

Factory-installed options include air-conditioning at $745, alloy wheel package at $375, power package (power windows, door locks, remote-control mirrors, and cruise control) $695, passive-restraint system $125, AM/FM/cassette with six speakers $330, power tilt/sliding glass sunroof $450, and two-tone paint $145.

Obviously, the buyer can raise the price of his Sonata by almost $3000 if all options are requested. Later this







Even at base trim levels, the Sonata is fully equipped. A seven-position tilt steering wheel is standard, and analog instrumentation is clear and easy to read; a refreshing change from some of the video-game dashboards we've seen. Seats are luxurious and comfortable, but lack lateral support for spirited driving.

year, a V-6 engine and leather interior trim will be options, which will add considerably more—in both pleasure and cost—to the Sonata.

Visually, the Sonata is a good-looking car in the current styling idiom: neat, tidy, taut, a bit rounded on the corners—a car you can be comfortable with even though it isn't a styling tour de force. We couldn't find a bad angle on the car.

This feeling of acceptance, comfort, call it what you will, stays with you once in the driver's seat. You look through a contemporary-styled tilt wheel (seven positions) at wonderful analog gauges. We're a bit tired of instrument panels that look like video games, and this one is refreshing.

There's a large 8000-rpm tachometer (redline at 6000) and 120-mph speedometer flanked by oil pressure and coolant temperature gauges on the left, voltmeter and fuel level on the right. The odometer reads to 999,999 and the tripmeter to 999.9.

A bank of indicator lights, suitably labeled for quick identification, runs across below the analog dials to warn of system malfunctions or low fluid levels. Markings are white on black, and we found that the instrument panel is easily seen and read both day and night. They've also done a good job in positioning the curved glass in front of the panel to prevent reflections.

Outside lights are controlled by a stalk on the left of the steering column, windshield wipers (two-speed plus intermittent) and cruise control work from the right-hand stalk.

Heater/air-conditioning controls and radio/cassette are in the center of the panel, within easy reach of both driver and front seat passenger. The digital clock is also at top center where everyone in the car can see it.

Statistics and specifications sometimes don't tell the whole story. Some cars look great on paper, but when you take them home, they just don't measure up to your expectations.

If you're not expecting passionate excitement or breathtaking performance, the Hyundai Sonata is very liveable. Interior room for passengers and trunk space (particularly when the rear seatback is folded in either of its 40/60 split or all folded) for cargo are outstanding for a car with the Sonata's modest outside dimensions.

The transverse-mounted SOHC 2.4-liter 4-cylinder engine has two inclined valves per cylinder operated by rocker arms off the camshaft. Two counter-rotating balance shafts (an invention pioneered by Frederick W. Lanchester in 1911), are mounted low

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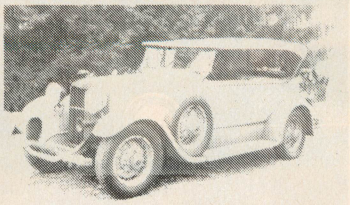
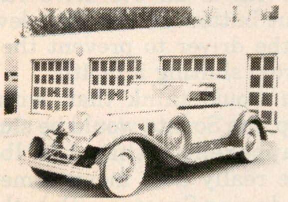


1932 Packard (V-12)



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in the cast iron block, and the result is a smooth engine at any rpm at least up to the 6000 redline, which is as far as we took it.

Drive to the front transaxle goes through either a 5-speed manual or an electronic 4-speed automatic in which 4th is an overdrive ratio. A lockout button on the shift lever allows the driver to prevent the gearbox from shifting into 4th.

You would think that, with only 110 hp, the Sonata would be sluggish, but apparently that 138 lb-ft of torque really does mean something. After driving Sonatas with both manual and automatic transmissions, we were impressed with freeway onramp and passing ability. You're not going to match acceleration with your friend's Porsche Carrera, but then you didn't pay slightly north of $50,000 for the Sonata, either.

Our usual mountain test circuit was augmented this time by a route that took us up to more than 6000-ft elevation, and we found that it not only performed well at more than mile-high elevations but was as good on curving mountain roads as in stop-and-go traffic.

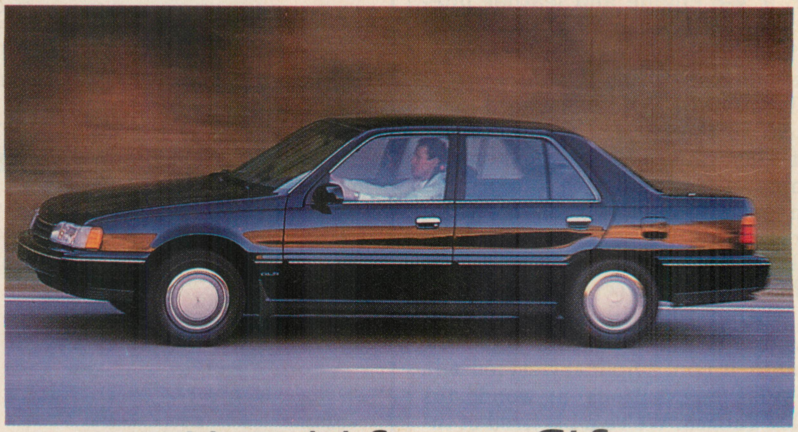
The unitized body is strong and rigid, allowing the suspension to do its stuff properly. Front suspension is the ubiquitous MacPherson strut and coil spring assembly with an anti-roll bar. At the rear is something Hyundai calls "semi-independent 3-link torsion axle with coil springs and stabilizer bar." This is a puzzling description (it looks like a beam axle to us) as we view "semi-independent" much as we would "semi-pregnant" or "semi-unique." You either are, or you aren't.

Whatever, it works well. In fact, so well that it begs for a better driver's seat. The seats are comfortable (front and rear), but offer almost no lateral support. Passengers have grab handles over each door, but the driver has only the steering wheel to hang on to, and the car will corner faster than the driver is comfortable doing it.

The Sonata gets up to 100 mph fairly easily, as we found on our test trip, although we don't know where you'd use that kind of speed (*you* wouldn't, would you?). The Sonata's noise level is low enough at that speed that you could enjoy good music on the stereo or carry on a conversation between passengers without shouting.

Brakes are 10.1-in.-diameter ventilated discs in front, 9-in. drums in the rear. In a time when 4-wheel disc brakes are *de rigueur*, on many cars, particularly performance cars, disc/

TECH DATA



Hyundai Sonata GLS

GENERAL

Vehicle mfr.	Hyundai Motor Co., Seoul, Korea
Vehicle importer	Hyundai Motor America, Garden Grove, Calif.
Body type	5-pass., 4-dr.
Drive system	Front engine, front drive
Base price	$12,305
Price as tested	$13,570

ENGINE

Type	Transverse inline 4, liquid cooled, cast iron block, alloy head
Displacement	2351 cc (143.4 cu in.)
Compression ratio	8.5:1
Induction system	Multi-port EFI
Valvetrain	SOHC, 2 valves/ cylinder
Max. power (SAE net)	110 hp @ 4500 rpm
Max. torque (SAE net)	138 lb-ft @ 3500 rpm
Emissions control	3-way catalyst, EGR
Recommended fuel	Unleaded regular

DRIVETRAIN

Transmission	4-sp. auto.
Transmission ratios	
(1st)	2.55:1
(2nd)	1.49:1
(3rd)	1.00:1
(4th)	0.69:1
Axle ratio	3.99:1
Final drive ratio	2.73:1

CAPACITIES

Crankcase	4.2 L (4.4 qt)
Fuel tank	59.8 L (15.8 gal)
Luggage	379 L (13.4 cu ft)
Range (city/hwy.)	509/636 km (316/395 mi)

SUSPENSION

Front	Independent, MacPherson struts w/ coil springs, stabilizer bar
Rear	Semi-independent, twist beam w/coil springs, stabilizer bar

STEERING

Type	Rack and pinion, power assist
Ratio	16.2:1
Turns (lock to lock)	3.1
Turning circle	10.9 m (35.7 ft)

BRAKES

Front	254 mm (10.0 in.), vented discs, power assist
Rear	229 mm (9.0 in.), drums, power assist
Anti-lock	Not available

WHEELS AND TIRES

Wheel size	14 x 5.0 in.
Wheel type	Stamped steel
Tire size & construction	P185/70R14 steel-belted radial
Tire mfr. & model	Michelin EPX

DIMENSIONS

Published curb weight	1262 kg (2783 lb)
Wheelbase	2649 mm (104.3 in.)
Overall length	4681 mm (184.3 in.)
Overall width	1750 mm (68.9 in.)
Overall height	1407 mm (55.4 in.)
Track, f/r	1455/1440 mm (57.3/56.7 in.)

SPECIFICATIONS

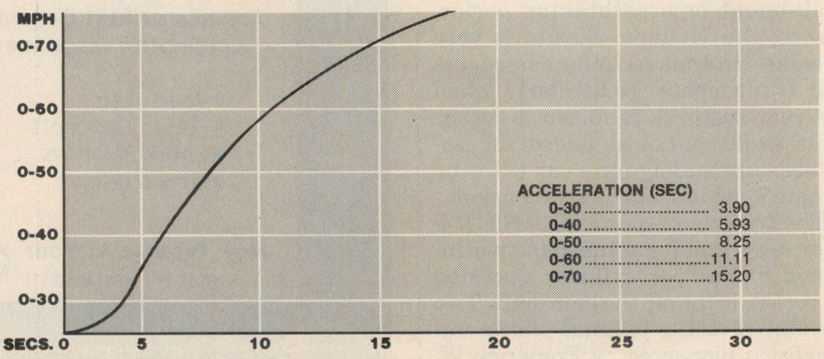
Power-to-weight ratio	25.3 lb/hp
Drag coefficient	0.34
Int. noise lvl. (at 60 mph)	68 dBA
EPA (city/hwy.)	20/25 mpg

MEASURED PERFORMANCE

QUARTER MILE	
TIME	18.31 sec
SPEED	76.7 mph
BRAKING	
60-0	148 ft
30-0	37 ft
SKIDPAD	0.76 g

SPEEDOMETER CALIBRATION

Indicated	30	40	50	60
Actual	30	40	50	60



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"Slick 50 does reduce engine heat and ordinary wear, and our informal tests indicate that it will improve gas mileage by about two or three miles per gallon...Slick 50 does exactly what PetroLon claims it does." Consumers Digest,(March/April 1982, p. 35)

Researchers at a **nationally respected research laboratory,** after applying a powerful ultrasonic cleaning process to a Slick 50 treated engine part, were surprised at its permanence. They stated, "We actually expected the PetroLon Slick 50 'Poly' resin coating to also be removed, but later found it was still there."

The Federal Aviation Administration has fully accepted a similar product – Slick 50 Aircraft Treatment (F.A.R. #33.49).

TUV, a German testing laboratory with credentials every bit as prestigious as our Underwriters Laboratories, tested Slick 50 in 1986. They found substantial increases in both gas mileage and horsepower. Their tests showed that these gains were due to a reduction in friction.

A test done at the **San Diego State University** revealed that, "Slick 50 does increase horsepower and decreases fuel consumption in tests done at the university." The **Space Shuttle Columbia** uses the chemical "poly" in its gears and bearings because it is the only chemical lubricant which can withstand the heat and corrosive elements of space.

Perhaps the most dramatic of all is a torture test overseen by the Automotive Services Council for Pennsylvania. This test was shown on television station WTVE: Three cars with between 75,000 and 129,000 miles on them, were treated with Slick 50. Six months later the oil was drained from each vehicle and the cars were driven without the oil plugs for about half an hour. The water temperature never rose and the engines sustained no apparent damage.

How do you give an engine a "poly" treatment? Very simply! Just before an oil and filter change, add Wynn's™ Engine Flush (sent **free with each order**) to clean out your engine. Then drain your oil, change the filter, and add the proper amount of oil less one quart. Add one quart of Slick 50, drive for thirty minutes, and leave it in the crankcase for 3,000 miles. (Add two quarts for engines with oil capacities of seven quarts or more.)

Slick 50 gives a permanent coating so you need to treat your engine only once, and not each time you change your oil. Slick 50 is also excellent for turbocharged engines, aluminum block engines and rotary engines.

Will it work with most oil? Yes! Slick 50 will work with all petroleum-based oils and synthetics compatible with petroleum based oils.

What are the benefits of Slick 50? Your actual benefits in percentages may vary, depending on the kind of driving you do, the condition of your vehicle, etc. By reducing friction, Slick 50 does all of the following: Slick 50 **increases gas mileage.** Slick 50 **increases horsepower** - small economy cars and large RV's really need this! Slick 50 **makes for easier starting** (important in cold weather.) Slick 50 **reduces operating temperatures,** thus increasing the lubrication of your oil and the life of your engine. Since lubricating lead is being removed from gas, and unleaded gas is poor in lubricating qualities, **this extra lubrication of Slick 50 on valve systems and guides is a real bonus.**

Last, but not least, the drastic reduction in engine wear can delay costly overhauls. These can often cost well over $1,000. Slick 50 eliminates the "lubrication starvation" that all cars experience when you first start them, before the oil has a chance to circulate. Up to 90% of the wear on a car can be caused by this lubrication starvation. You receive all these benefits for less than the cost of two tanks of gas ($39.95).

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MT-6

drum setups seem archaic; but during our several weeks with three different Sonatas, we never found the brakes wanting. Stops were straight and true with no drama.

Part of the credit for comfort, handling, and stopping has to be attributed to the tires: Michelin EP-X M+S P185/70R14 All-Season steel-belted radials. Similar design 195/70R14s come with the alloy wheel option.

So far, we've been high on praise for the Sonata, and we have no qualms about giving it our blessing. If you're after basic, comfortable, practical transportation in a good-looking car, the Sonata should be seriously considered.

There were a few things we didn't like, some of which are personal and not necessarily shared by others. We're not enthusiastic about passive restraints. We've been using belt and shoulder harnesses voluntarily for years and don't need Big Brother to do it for us. We drove a base Sonata that had a do-it-yourself hookup lap/shoulder belt and preferred that over the "slide-around-the-door" passive setup standard on the GLS.

The passive restraint isn't necessarily Hyundai's fault—all car companies are, or soon will be, doing something of this nature to comply with federal regulations.

A beautiful four-color brochure for the Sonata states, "All Sonatas come with lots of convenient standard features. A.) Dual remote control rearview mirrors adjust easily." Well, our GLS test car did indeed have remote mirror adjustment, but the standard model had manually adjustable mirrors, and the right-hand mirror is a pain to adjust correctly.

We're astounded that a company this new could get it so right so soon

Also, our base-model test car had hand-crank wind-up windows. This doesn't bother us much, we can live with it; but the knob on the window crank was too small and kept slipping out of our hands.

While not designed as a sports or performance car, the Sonata can be driven easily and safely in a sporting manner. The 16.2:1 power-assisted rack-and-pinion steering allows a fast pace to be maintained through curving canyon roads with complete driver confidence.

Front-wheel-drive cars require a slightly different technique from that of rear-drive cars, but suspension and tire design are so good today that it doesn't make much difference which end is driving—except in out-and-out racing conditions. We'd love to get our hands on a Sonata when the V-6 is available—particularly if it has a driver's seat with more lateral support.

Hyundai has given no indication of what may be coming for future updates on Sonata or Excel (multi-valve cylinder heads, turbochargers, superchargers, and more displacement are all possibilities). Right now, the company is building the cars it wants to build, i.e., good, solid, basic transportation cars that don't need exotic engines.

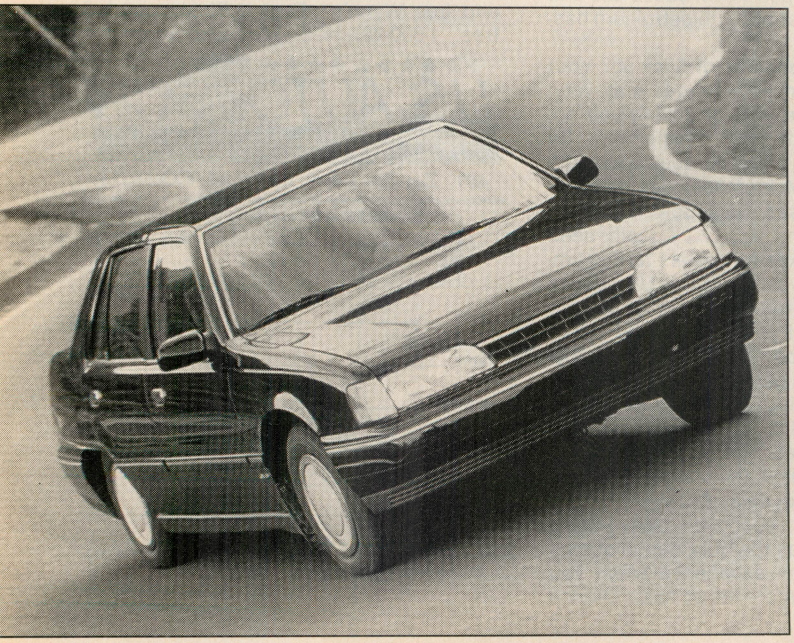
As long as sales keep going the way they have so far, we probably won't see a more exotic Hyundai engine other than the upcoming SOHC V-6 (Mitsubishi-designed, as are the Excel and Sonata engines but all made by Hyundai). What we probably will see is a coupe to get the company into the personal car market segment.

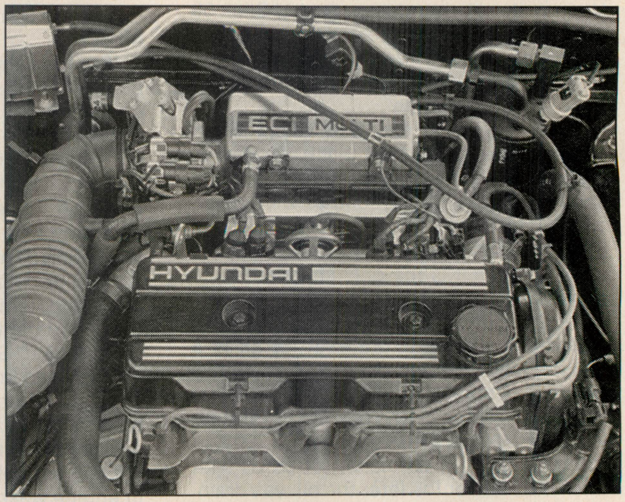
Looking back over the above comments, we realize it sounds a bit like a puff for Hyundai. What's happening here is that we're astounded that a company this new (Hyundai was formed in 1947 and started building cars in 1967) can get it so right so soon. Look at some of the car companies that have been in business for 75 or 80 years and are just now getting their act together. A few of them still haven't got it right.

It's obvious somebody (or a lot of somebodies) at Hyundai has done his homework, and it's paying off. **MT**

Hyundai Sonata vs. Competition

Model	Track, f/r	Wheel-base	Overall Length	Displace-ment	Horse-power	Torque
Hyundai Sonata	57.3/56.7	104.3	184.3	2351 cc	110	138
Honda Accord	58.3/58.1	102.4	179.7	1955 cc	98	109
Toyota Camry	58.3/57.1	102.4	182.1	1998 cc	115	124
Mazda 626	57.3/57.7	101.4	179.3	2184 cc	110	130
Nissan Stanza	57.5/57.5	100.4	177.8	1974 cc	94	114
Mitsubishi Galant	57.5/57.1	102.4	183.7	1997 cc	135	116





Hyundai has opted for a 2.4-liter 4-cylinder engine with electronic fuel injection to power the Sonata. With 138 lb-ft of torque, the engine feels stronger than the rated 110 hp would indicate.

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PIRELLI

P700

		205/55VR-16	183
		215/55VR-16	195
195/50VR-15	$125	225/45VR-16	200
205/50VR-15	159	225/50VR-16	191
225/50VR-15	180	245/45VR-16	210
255/45VR-15	193	215/45ZR-17	222
205/50VR-16	190	235/45ZR-17	232

P600

185/60HR-14	$83	205/55HR-15	119
195/60HR-14	92	205/55VR-15	129
195/65HR-14	100	205/60HR-15	114
205/55VR-14	111	205/60VR-15	126
205/60HR-14	105	205/65VR-15	135
195/50HR-15	100	215/60HR-15	112
195/60HR-15	99	225/60VR-15	168
195/65HR-15	112	225/60ZR-15	168
195/65VR-15	120	235/60VR-15	176

P4/P44

		185/70SR-13	47
145SR-10*	$ 25	165SR-14	42
155SR-12	32	175/70SR-14*	43
145SR-13	30	175SR-14	42
155SR-13	34	185/70SR-14	47
165SR-13	37	185SR-14	42
165/70SR-13	39	195/70SR-14	52
175SR-13	40	205/70SR-14	54
175/70SR-13	44	165/SR-15*	41
175SR-13*	44	* P 3	

P-7

175/50VR-13	$ 73	215/55VR-15	155
195/55VR-13	98	225/50VR-15	175
205/60VR-13	120	285/40VR-15	234
205/55VR-14	139	285/50VR-15	238
225/55VR-14	149	345/35VR-15	265
195/50VR-15	116	195/50VR-16	150
205/50VR-15	138	205/55VR-16	173
205/55VR-15	149	225/50VR-16	190
215/50VR-15	170	265/50VR-16	222

P-8

185/65SR-15	$61		

P-5

175/70HR-13	$ 68	205/70HR-14	103
185/70HR-13	61	205/70VR-14	118
185/70HR-14	76	205/70VR-15	120
195/70HR-14	95	215/70VR-15	129

P-6

185/60HR-13	$ 71	185/65HR-15	83
205/60HR-13	78	195/60HR-15	91
185/60HR-14	76	195/60VR-15	108
195/60HR-14	88	195/65HR-15	95
195/65HR-14	98	195/65VR-15	111
195/65VR-14	111	205/55VR-15	127
205/60HR-14	103	205/60HR-15	106
205/60VR-14	113	205/60VR-15	118
225/60HR-14	109	215/60HR-15	121
225/60VR-14	120	215/60VR-15	140
185/70VR-15	107	235/55VR-15	158

YOKOHAMA

Y-352

		205/60HR-14	83
175/70HR-13	$ 49	205/70HR-14	64
185/60HR-13	58	225/60VR-14	85
185/70HR-13	53	195/60HR-15	76
205/60HR-13	70	205/60HR-15	80
215/50HR-13	77	205/60VR-15	83
235/50HR-13	82	215/60HR-15	91
185/60HR-14	67	215/60VR-15	95
185/70HR-14	59	225/60VR-15	85
195/60HR-14	76	235/60HR-15	87
195/70HR-14	60	295/50HR-15	CALL

A-403

195/50VR-15	$ 96	205/55VR-16	140
205/50VR-15	115	225/50VR-16	143
225/50VR-15	130	245/45VR-16	163

Y-382

185/60HR-14	62	195/60HR-15	74
195/60HR-14	70	205/60HR-15	79
205/60HR-14	78	215/60HR-15	84
215/60HR-14	79	215/65HR-15	80

AVS (Intermediate)

205/60VR-13	$98	215/60VR-15	130
185/60VR-14	87	225/50ZR-15	176
195/60VR-14	96	255/45ZR-15	219
195/65VR-14	94	285/40ZR-15	221
205/60VR-14	112	195/50VR-16	154
225/60VR-14	118	205/45VR-16	165
185/65VR-15	93	205/50VR-16	174
195/50VR-15	140	205/55ZR-16	189
195/55VR-15	140	225/50ZR-16	194
195/60VR-15	106	245/45ZR-16	208
195/65VR-15	103	245/50ZR-16	195
205/50ZR-15	165	255/50ZR-16	203
205/60VR-15	121	215/45ZR-17	196
205/65VR-15	117	235/45ZR-17	209
		255/45ZR-17	216

A008R (Soft Compound)

175/70HR-13	$ 71	205/50VR-15	147
185/60HR-13	75	205/60HR-15	103
185/70HR-13	77	215/60HR-15	110
185/60HR-14	81	225/50VR-15	166
195/60HR-14	90	225/60HR-15	113
205/60HR-14	99	205/55VR-16	175
215/60HR-14	102	225/50VR-16	179
225/60HR-14	104	245/45VR-16	189
185/70HR-15	87	245/50VR-16	176
195/50VR-15	125	255/50VR-16	185
195/60HR-15	95		

P77 Special Prices

175/70HR-13	$ 46	205/70HR-13W	58
185/70HR-13	51	185/75HR-14W	58
185/70HR-14	52	195/70HR-14W	58
195/70HR-14	54	195/75HR-14W	60
205/70HR-14	60	205/70HR-14W	63
205/75HR-15	70	205/75HR-15W	65
225/70HR-15	85	215/75HR-15W	70

YOKOHAMA

A-008

		205/50ZR-15	130
		205/55ZR-15	136
165/70HR-10	$ 57	205/60VR-15	118
175/70HR-12	68	225/50ZR-15	159
175/70HR-13	72	235/60VR-15	139
185/60HR-13	60	285/40VR-15	221
185/70HR-13	58	345/35ZR-15	CALL
185/60HR-14	82	195/50ZR-16	162
185/70HR-14	79	205/55ZR-16	161
195/60HR-14	94	225/45ZR-16	184
195/70HR-14	86	225/50ZR-16	171
205/55VR-14	133	245/45ZR-16	208
205/60HR-14	106	245/50ZR-16	194
205/70HR-14	84	255/50ZR-16	204
225/60HR-14	108	215/45ZR-17	194
195/50ZR-15	110	235/45ZR-17	208
195/60HR-15	101	255/40ZR-17	220

A-001R

175/70HR-13	$ 60	195/70HR-14	71
185/60HR-13	68	205/60HR-14	82
185/70HR-13	70	205/70HR-14	71
205/60HR-13	84	195/60HR-15	92
185/60HR-14	68	205/60HR-15	94
195/60HR-14	75	215/60HR-15	102

Y350/Y351

145/80R-13	$33	165/70-SR-113	44
145SR-13	34	175/0SR-13	44
155SR-13	37	185/70SR-13	49
165SR-13	39	185/70SR-14	57
175SR-14	45	195/70SR-14	55

Fulda Y-2000

175/70HR-13	$ 55	195/60HR-15	82
185/70HR-13	64	205/60HR-15	86
185/70HR-14	64	205/60VR-15	96
195/70HR-14	69	215/60VR-15	110
205/70HR-14	80	225/60VR-15	118
185/70VR-15	94	195/50VR-15	79
195/65HR-15	73	205/50VR-15	98
185/65HR-15	62	225/50VR-15	132
195/65VR-15	73	205/55VR-15	118
205/65VR-15	93	205/45VR-16	146
185/60HR-13	64	205/55VR-16	134
205/60HR-13	74	225/50VR-16	146
185/60HR-14	63	225/45VR-16	172
195/60HR-14	72	245/45VR-16	177
205/60HR-14	82	255/50VR-16	163

B.F.G. Comp T/A

205/60VR-13	$ 84	225/50VR-15	146
195/60VR-14	84	205/55VR-16	130
215/60VR-14	88	225/50VR-16	140
195/50VR-15	88	245/45VR-16	139
205/50VR-15	130	245/50VR-16	162
205/60VR-15	103	255/50VR-16	169
215/60VR-15	110		

B.F.G. Comp T/A HR (All Season)

185/60HR-14	$76	195/60HR-15	84
195/60HR-14	80	205/60HR-15	84
215/60HR-14	91	215/60HR-15	88
225/60HR-14	87	215/65HR-15	90

Goodyear

Gatorback VR

		245/50VR-15	179
185/70VR-13	$92	245/60VR-15	149
205/60VR-13	115	255/60VR-15	149
205/60VR-14	105	265/50VR-15	204
215/60VR-14	129	205/55VR-16	163
235/60VR-14	135	225/50VR-16	171
195/60VR-15	128	225/60VR-16	149
205/50VR-15	153	245/50VR-16	185
205/60VR-15	116	245/50ZR-16	220
215/60VR-15	135	255/50VR-16	186
225/50VR-15	173	255/50ZR-16	225
225/60VR-15	139	275/40ZR-17	288

Euro-Gatorback VR

185/60VR-14	$85	195/50VR-16	145
195/60VR-14	87	205/45VR-16	181
205/60VR-14	105	205/50VR-16	149
195/50VR-15	119	225/45VR-16	178
205/55VR-15	147	225/50VR-16	185
205/55VR-15	142	225/50ZR-16	188
205/60VR-15	116	225/55VR-16	192
215/50VR-15	163	245/45ZR-16	220
225/50VR-15	149	245/55VR-16	180
235/55VR-15	140		

Eagle GT+4

		195/70R-15WL	110
		205/60R-15	111
185/70HR-13	$106	215/60R-15B	112
185/70R-14B	94	215/60HR-15WL	132
185/70HR-14WL	111	245/60HR-15	145
195/70R-14WL	103	255/60HR-15	149
195/70R-14B	99	215/65R-15B	112
195/70HR-14WL	117	215/65R-15WL	118
205/60HR-14WL	120	215/65VR-15B	136
205/70HR-14WL	123	215/65HR-15WL	132
215/60R-14B	109	205/55HR-16B	142
215/60HR-14WL	128	205/55VR-16B	161
225/60HR-14WL	132	215/60R-16B	116
235/60HR-14WL	136	225/60R-16B	125
195/60HR-15	121	225/60VR-16B	145

Goodyear NCT

		195/60VR-15	108
175/70HR-14	$ 72	205/55VR-15	135
185/60HR-14	80	205/60HR-15	89
185/70HR-14	80	205/60VR-15	115
195/60HR-14	85	205/65HR-15	100
195/60VR-14	102	205/65VR-15	110
195/65HR-14	95	225/60VR-15	132
195/65VR-14	102	235/60VR-15	135
195/70HR-14	85	235/70HR-15	122
195/50VR-15	88	205/55VR-16	152
195/65HR-15	90	225/50VR-16	166

TIRE SPECIALS

245/60VR-15 Michelin XGT	98
195/60HR-14 Firestone S660	44
215/60HR-15 Goodyear GT"S"	59
235/55VR-15 Euro-Gatorback	139
205/60HR-15 Goodyear NCT	83
195/50VR-15 Comp T/A	88
235/60VR-15 Comp T/A	103
255/60VR-15 Comp T/A	106
205/55VR-16 Comp T/A	130
225/50VR-16 Comp T/A	140

Michelin

TRX

		220/55VR-390	125
180/65HR-390	$87	240/55VR-390	142
190/65HR-390	95	240/45VR-415	149
200/65VR-390	121	240/55VR-415	145

Michelin MXV

185/60HR-14	$ 82	185/65HR-15	89
195/60HR-14	86	195/60HR-15	87
195/65HR-14	92	195/65HR-15	102
195/65VR-14	102	195/65VR-15	115
195/70HR-14	82	205/60HR-15	101
205/70HR-14	88	205/55VR-15	135

XWX

205/70VR-14	$140	205/70VR-15	157
215/70VR-14	159	215/70VR-15	185
185/70VR-15	129	225/70VR-15	200

Uniroyal Rallye 340

185/60HR-14	$ 85	205/55VR-15	119
195/60VR-14	103	205/60VR-15	119
195/65HR-14	78	205/65VR-15	113
195/65VR-14	99	225/60VR-15	166
195/65VR-15	96		

RE 71 (Bridgestone)

205/60HR-13	$ 80	215/60VR-15	141
205/60VR-13	115	225/60HR-15	125
185/60HR-14	95	225/60VR-15	144
195/60HR-14	104	225/50VR-15	165
205/60HR-14	85	245/50VR-16	190
215/60HR-14	113	205/55ZR-16	177
225/60HR-14	118	225/50ZR-16	185
195/50VR-15	126	245/45VR-16	198
195/60HR-15	105	245/50VR-16	200
205/50HR-15	149	255/50ZR-16	208
205/60HR-15	106	215/50ZR-17	194
205/60VR-15	132	235/45ZR-17	205
215/60HR-15	114	255/40ZR-17	222

HP 41

		195/60HR-15	68
205/60HR-13	$ 66	205/60HR-15	72
185/60HR-14	64	215/60HR-15	77
195/60HR-14	71	215/65HR-15	81
215/60HR-14	77	225/60HR-15	87
225/60HR-14	82	235/60HR-15	88
235/60HR-14	87	255/60HR-15	92

FALKEN

175/70HR-13	$ 43	215/60HR-15	68
185/70HR-13	49	225/60VR-15	89
185/70HR-14	51	235/60HR-15	83
195/70HR-14	59	195/50HR-15	82
205/70HR-14	60	195/50VR-15	93
185/60HR-13	51	205/50VR-15	112
205/60HR-13	58	225/50VR-15	126
185/60HR-14	53	205/50VR-16	140
195/60HR-14	57	205/55VR-16	132
205/60HR-14	60	225/50VR-16	139
195/60HR-15	60	245/50VR-16	149
225/60HR-14	65	255/50VR-16	157
205/60HR-15	62	215/45ZR-17	190
		235/45ZR-17	194

Original Equipment

Dunlop D40 (OE Porsche)

205/55VR-16	$165	245/45VR-16	198
225/50VR-16	172		

RE88/87 (Bridgestone)

185/60HR-14 RE 88	$79
195/60HR-14 RE 87	83
205/60VR-14 RE 87	137
195/60HR-15 RE 88	85

G04

		195/65-15	91
195/60-14	$83	205/60-15	88

137V(RE86)

		225/60HR-14	86
185/60HR-14	$72	195/60HR-15	77
195/60HR-14	76	205/60HR-15	81
205/60HR-14	93	215/60HR-15	87

G03

		205/60R-15	78
225/60HR-14	$82	215/60R-15	81

TOYO Z-17

		165SR-13	41
145SR-13	$37	175SR-14	46
155SR-13	37	195/175R-14	50

Z-12

165/70SR-13	$45	185/70SR-13	50
175/70SR-13	46	185/70SR-14	52
175/70SR-13RWL	53	185/75SR-14	47

714

195/70SR-14	$55	195/70SR-RWL	63

715

185/70SR-13	$50	185/70SR-13W	55

YOKOHAMA A388 Y361/362

195/65HR-15	$88	145-12	$31
		165-70-12	39

A341

195/60-15	$91	195/65-15	86

Y382

155SR-13	$37	185/70SR-14	51
165/80R-13	48	195/75R-14	52
175/70SR-13	45	205/75R-14	55
185/70SR-13	49	205/75R-140WL	84

AX323

		195/60HR-14	83
185/60HR-14	$74	195/60HR-15	87

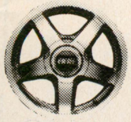
CH, CV 51 (Continental)

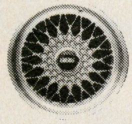
175/70HR-13	$ 61	205/60HR-13	84
185/70HR-13	65	185/60HR-14	76
185/70HR-14	71	195/60HR-14	86
195/70HR-14	77	195/60HR-15	93
205/70HR-14	84	205/60HR-15	96
195/65HR-14	77	215/60VR-15	120
185/65HR-15	77	205/55VR-15	120
195/65HR-15	79	205/55VR-16	140
195/65VR-15	89	205/50VR-15	125
205/65HR-15	87	225/50VR-16	148
205/65VR-15	96		

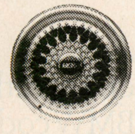
1 Tire and Wheel Packages

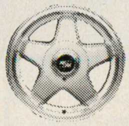
- Prices include 4 tires, 4 wheels, mounting and balancing.
- Wheels available separately: call for prices.
- Call us for a package designed specifically for you.
- Package shown are for price reference

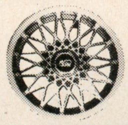
Mail $3.00 for color brochure. Specify car.

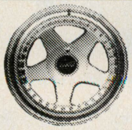
2

BBS-RD
Firs: Chrysler (fwd), GM (fwd), Fiero, Taurus and more
Finish: Polished face/anthracite *background*
Sample Package: 15x7 wheel with 205/60VR-15 Gatorback **$1,256**

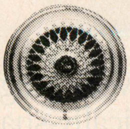
3

BBS-RZ 14, 15, 16"
Fits: Audi, BMW, Porsche, Mercedes, Volvo, VW
Finish: Gold, Silver or Black
Sample Package: 14x6 5 wheel with 205/60HR-14 RE-71 **$1,268**
16x7 5 wheel with 225/50VR-16 Goodyear VR **$2,056**

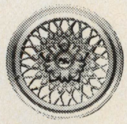
4

BBS-RS 15,16, 17" 3 piece
Fits: Acura, Audi, BMW, Corvette, Ferrari, Honda, Isuzu, Jaguar, Mazda, Mercedes, Nissan, Porsche, SAAB, Toyota, Volvo, VW and more
Sample Package 16x7 wheel with 225/50VR-16 RE-71 **$2,956**

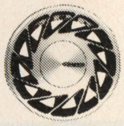
5

MSW Type 20—14,14"
Fits: Acura (all), BMW (all), Ford, Honda, Jaguar, Mazda Mercedes, Mitsu, Nissan, Toyota, VW.
Finish: Silver or Black center with polished lip.k
Sample Package: 14x6 wheel with 185/60 HR-14 P600 **$976**

6

MSW Type 21—14,15"
Fits: Acura (all), BMW (all), Honda, Mazda, Mercedes, Nissan, Toyota, Volvo, VW.
Finish: Gold, *Silver, or Antracite diamond cut.*
Sample Package: 15x7 wheel with 215/60 HR-15 P600, **$1,136**

7

MSW Type 24—17"
Fits: 84+ Corvette, BMW, Mercedes Porsche.
Finish; Black or Silver Center.
Sample Package: 17x8 wheel with 235/45ZR-17AVS **$3,370**

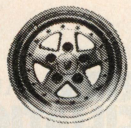
8

MSW Type 8—15, 16" 3 piece
Fits BMW, Bi-Turbo, Ferrari, Ford, General Motors, Jaguar, Nissan, Mercedes, Porsche, RX-7, Saab 9000, Volvo, VW.
Finish: Gold or Black Polished.
Sample Package: 16x7 wheel with 225/50VR-16 RE71 **$2,150**

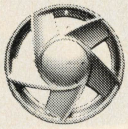
9

MSW Type 1,2—13,14,15"
Fits: Acura, BMW, Chrysler (FWD), GM (FWD), Honda, Mazada, Mercedes, Mitsibishi, Saab, Toyota, VW, Volvo.
Finish: Gold, Black or Antracite diamond cut.
Sample Package: 14x6 wheel with 185/60 HR-14 Pirelli P600 **$800**

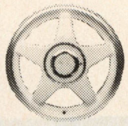
10

MSW Type 5—14, 15"
Fits: Audi, BMW (3), Chrysler, Ford (fwd), GM (fwd), Honda, Mercedes, VW, 190.
Sample Package: 14x6 wheel with 185/60HR-14 A008 Yoko **$856**

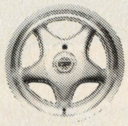
11

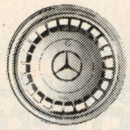
MSW CLASSIC—15;; Only Mercedes (all except 86 + 10).
Finish: Silver.
Sample Package: 15x6.5 wheel with 195/60HR-15 P6 Pirelli **$772**
15x7 wheel with 205/65VR-15 CV51 Conti **$892**

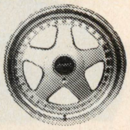
12

GOTTI — 2 pce 16"
Fits: Corvette, Porsche.
Finish: Polished face with gold accents
Sample Package: 16x9 with 255/50 VR-16 Falken **$1,668**

13

WEDS G-S—13, 14, 15, 16"
Fits: Acura, Audi, BMW, Chrysler, Ford, GM, Honda, Hyundai, Mazda, Mitsu, Nissan, Saab, Sterling, Toyota, VW.
Finish: White, Black, Silver with Polished Face.
Sample Package: 14x6 wheel with 185/60HR-14 Compta HR **$888**

14

WEDS RT—14, 15, 16"
Fits: Acura, BMW, Chrysler, Ford, Mustang GM (fwd), Honda, Mazda, Mercedes, Mitsu, Nissan, Porsche, Toyota, VW.
Finish: Silver, Gold, Black or White Center
Sample Package: 15x6 wheel with 195/50VR-16 Comp T/A **$1072**

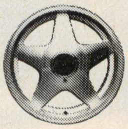
15

CENTRA TYPE 11—15x7
Locking center plate.
German-made quality.
Fits BMW 325, Honda Prelude, Mr2, VW.
Finish: Silver or Black Center.
Sample Package: 15x7 wheel with 195/50VR-15 RE71 **$1,264**

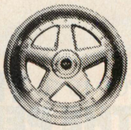
16

CENTRA 31—14, 15, 16"
Fits: all Mercedes
Finish: Polished Face with Gold Star.
Sample Package: 15x7 wheel with 205/65VR-15 Conti CV51 **$1,139**
16x7 wheel with 225/50VR-16 Goodyear VR **$1,488**

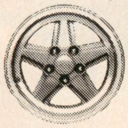
17

FITTIPADI — 5 spoke, 16,17"
Fits: BMW, Camaro, Corvette, Jaguar, Maxda RX7, 300ZX, Supra.
Finish: Polished face.
Sample Package: 16x7 wheel with 225/50VR-16 XGT **$2,352**
16x9.5 wheel with 255/50VR-16 A-008 **$2,608**

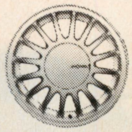
18

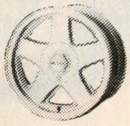
FITTIPALDI AERO—15" Only
Fits: Acura, BMW (3ser), Fiero, Ford, GM, (fwd, Honda, Mercedes, Nissan (Maxima), Toyota, VW, Volvo.
Finish: Polished Face.
Sample Package: 15x6 wheel with 195/50VR-15RE71 **$1,120**

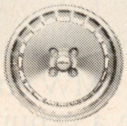
19

FITTIPALDI—5 spoke, 15x7
2 year finsih warranty
Fits: Acura Legend, BMW 325, Mustang, Maxima, VW.
Sample Package: 15x7 wheel with 205/50VR-15 Comp T/A **$1,234**

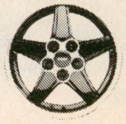
20

ETOLIE—16, 17"
Three-piece modular.
Fits Ferrari, GM, Porsche and more.
Finish: Polished Face with Gold Accents.
Sample Package: 16x7 wheel with 225/50VR-16 P700 **$3,172**

21

RONAL R 9—15, 16"
Fits: Audi, BMW, GM, Jaguar, Lincoln, Mercedes Benz, Mazda, Nissan, Porsche, Starion, Scorpio, Supra.
Finish: Silver, Black, White or Custom Paint.
Sample Package: 15x7 wheel with 205/55VR-15 Pirelli P600 **$1,288**

22

RONAL R 8—13,14,15"
Fits: Audi, BMW (3), Honda, Toyota, VW.
Sample Package: 14x6 wheel with 185/60HR-14 352 Yoko **$772**
15x6 wheel with 195/50HR—15Falken **$860**

23

RONAL R-5-15"
Fits: BMW 3, Ford Mustang, Honda, MR 2, VW.
Finish: Silver or Black with polished lip.
Sample Package: 15x7 wheel with 225/60 VR-15 RE71 **$1,292**

24

RONAL R 10—15x6.5, 15X7
Fits: Acura, Audi, BMW, Ford (fwd), Honda
Mazda, Mitsu, Saab, Toyota, VW.
Finish: Polished Face or Custom Painted.
Sample Package: 15X6.5 wheel with 205/60VR-15 Comp T/A **$892**

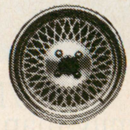
25

ENKEI 83—14x6, 15x6
Fits most front drive and new rear drive cars.
Finish: Polished Outer Lip with Black or White Spokes.
Sample Package: 14x6 wheel with 185/60HR-14 Fulda Y2000 **$808**

26

ENKEI 82—13, 14,15"
Fits: most front & new generation rear drive cars. (domestic & imported)
Finish: Polished face with Black or White Background.
Sample Package; 14x6 wheel with 185/60HR-14 Y2000 Fulda **$760**
13x5.5 wheel with 185/60HR-13 Falken **$664**

27

ENKEI 84—13, 14, 15"
Fits: most front and new generation rear drive cars (import and domestic).
Finish: White.
Sample Package: 14x6 wheel with 185/60HR-14 P600 Pirelli **$852**
13x5.5 wheel with 175/70HR-13 Y352 Yoko **$692**

28

ENKEI 92—13, 14, 15, 16"
Fits most cars.
Finish: Gold, Black, Silver, White (Polished Outer Lip).
Sample Package: 15x7 wheel with 205/60HR-15 Falken **$812**
16x7 Wheel with 225/50VR-16 Fulda Y2000 **$1,220**

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The car you need, reconciled with the car that you really want.

THE ULTIMATE DRIVING MACHINE.

Cressida vs. Maxima

by Jim Miller

PHOTOGRAPHY BY SCOTT DAHLQUIST, PETERSEN PHOTOGRAPHIC

If this is the preliminary, we can't wait for the main event

Anyone with even a passing interest in the luxury-performance class has got to be looking toward Japan for 1990. One year from now, Toyota and Nissan plan to step into the ring with a pair of luxury sedans intended to go head to head with the European heavyweights. In addition, Nissan's Infiniti and Toyota's Lexus (fortunately, the name survived Mead Data's Lexis/ Lexus suit) divisions present yet another market in which Japan's two Sumo-class auto makers will butt heads directly.

Almost in anticipation of that confrontation, those two have provided a preview luxury bout. This year, Toyota introduced a squeaky-clean new Cressida, matched by an equally bright and shiny new Maxima from the folks across the street at Nissan. And each company's approach to this class provides some interesting insights into what each has planned for its heavyweight entry.

Externally, both cars are as different from their predecessors as they are from each other. Previous generations of both cars featured crisply folded sheetmetal that made the pair look like different renditions of the same theme. This year, however, both companies went for a more rounded look. Toyota opted for a traditional, upright sedan styling that

owes much to the Camry and all but disappears in traffic. Nissan took a more avant-garde approach with the Maxima, giving it a sleeker appearance that lacks the Toyota's chrome badging and Volvoesque *mudflaps*.

Under the skin, the differences are even more pronounced, though neither exactly qualifies as unconventional. In fact, both follow in the footsteps of their forebears, with the Maxima sticking with its *front*-drive V-6 layout and the Toyota continuing its rear-drive inline-six configuration. But while the layout remains, the parts have all changed. In the case of the Toyota, a version of the Supra's DOHC 24-valve six now nestles under the Cressida's sloping hood. With electronic port fuel-injection, the 3-liter six whips up a class-leading 190 hp with 185 lb-ft of torque. The Maxima also borrows its power from the company's sport offering. The naturally aspirated 300ZX's 3-liter V-6 puts out 160 horses as it's trimmed out in the 4-door, with 181 lb-ft of torque.

Both the Maxima and Cressida swallow pavement irregularities like bats after mosquitoes

Despite the horsepower disparity, the two produce remarkably similar trap times, in part due to the Toyota's 264-lb weight handicap. The 3417-lb Cressida hustles from 0-60 in 9.64 sec, with the 3153-lb Nissan sliding through just a couple ticks later, at 9.82 sec. Through the quarter mile, the gap closes even more, with a time of 17.33 sec/80.9 mph for the Maxima compared with 17.27 sec/84.2 for the Cressida.

Both route their collective horses through electronically controlled 4-speed automatics. Both transmissions feature manual controls to lock out

The Maxima represents a departure from the traditional luxury car, at least in appearance

the overdrive 4th gear. In addition, each has a programmable sport mode, which alters shift points to improve both part-throttle response and acceleration.

On the road, the two seem even closer. The Toyota shifts a bit more crisply than the Nissan, but neither has the superb engine/transmission match and willing part-throttle downshifts we've seen recently from, say, Cadillac's STS or Allanté. Both engines make most of their power on the high side of the tachometer face, so they usually need a downshift before the acceleration gets really serious.

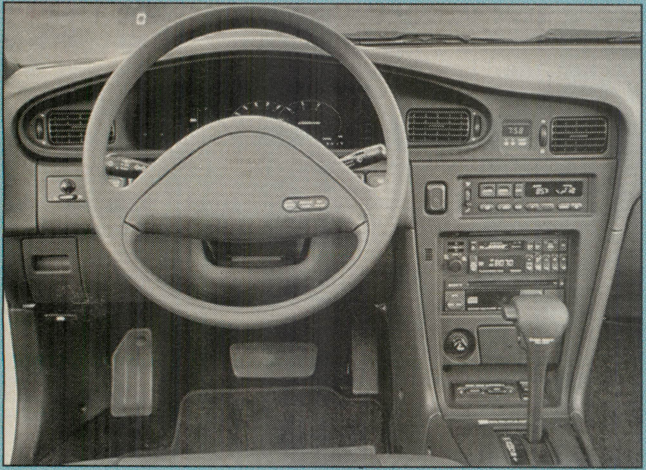
If you're still not convinced of the luxury bias of these two, one long freeway cruise should convince you. Both swallow pavement irregularities like bats after mosquitoes. Our Maxima came through with Nissan's second-generation sonar suspension, which uses sound waves to "read" the pavement surface and adjust shock damping in response. In practice, the adjustment works, and there's a slight, but noticeable, difference between the Sport and Comfort settings on the console. But the advantage of this system over the simpler SE suspension makes it hard to justify the additional cost and complication.

Even in Sport mode, the GXE won't impress any aspiring Brabhams. Neither of these two cuts a dashing apex, in fact, though much of that is due to tire selection as well as chassis tuning. Both cars roll out on Bridgestones: 205/65HR15 for the Nissan, 195/65HR15 for the Toyota. In terms of ultimate grip, only the Cressida cracked the magic 0.80g mark; the Maxima just missed, at 0.77 g. The Nissan's Electronic Equipment Package also included speed-sensitive steering, but the GXE never provided quite the feedback of the similarly equipped Toyota.

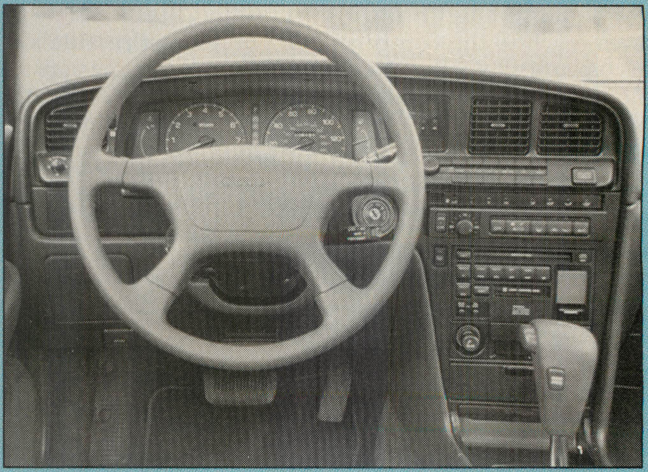
Though in terms of sporting ability the two pursue different paths to the same end, the situation changes regarding the luxury accoutrements, particularly in the interiors. There, the two differ widely in both approach and success. And the difference becomes obvious as soon as you open the doors.

Toyota's cabin leans much more toward almost Detroit-style luxury trappings, with wide, thick-bolstered seats, loose-pillow cushions, and soft, almost flannel-like upholstery. The seats would look right at home in a La-Z-Boy showroom, but offer a surprising amount of lumbar support and are genuinely comfortable. The company also offers a leather option as well as a digital instrument package, but our test car came with the standard interior pieces. The entire Cressida cockpit would look right at home in your father's Oldsmobile.

Just as it does with the exterior, Nissan's approach to interior design moves a bit closer to leading edge than Toyota's. For starters, the

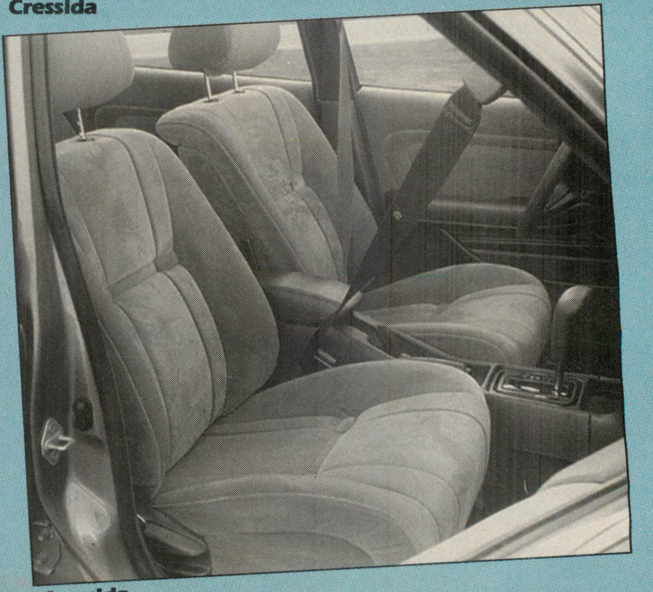


Maxima



Cressida

Maxima



Cressida

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The real difference between the Cressida and Maxima is the difference between sirloin steak and nouvelle cuisine

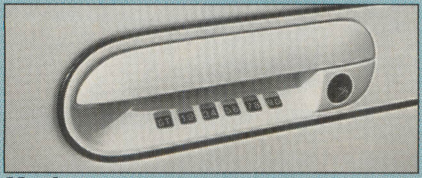
GXE's digital dash combines with a Head-Up Display (HUD), both of which we could live without. Visually, the seats seem a bit more sculpted than the Cressida's. But the cushion's actually too flat for long-term comfort, particularly with the leather-seating option, which accentuates the lack of support. Moreover, an annoying cutout between the seat and the back guarantees that anything placed on the cushion will wind up at your rear passenger's feet.

Aesthetically, the staff prefers the Maxima SE's standard interior over either the leather option or the Cressida's tufted pillows. But in terms of comfort, the Toyota gets the nod. After several hours on the road, the increased support makes all the difference.

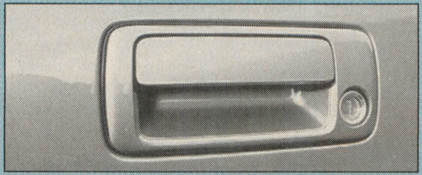
Regarding interior controls, the situation reverses, both in approach and success. Toyota has spiced the Cressida's dash with a bewildering array of buttons and dials. The company uses a split-control design with the radio and optional compact disc player, which divides the sound-system controls between two locations on the dash. The most-used tuning features are located about 4 in. above the stereo, with the automatic climate-control buttons sandwiched between. In addition, the climate control utilizes a slide-out "drawer" for the manual override switches for venting and fan.

The concept supposedly simplifies the stereo and heater/vent/air conditioning (HVAC) controls. In reality, if the driver opts for a CD player, he's faced with no fewer than 35 different dash-mounted buttons between the two systems, and is required to search between two locations for both the stereo and climate controls.

The Nissan, on the other hand, features what might be the simplest, most-logical HVAC controls in the business. The fully automatic mode monitors everything—temperature, fresh air, vent location, and fan speed. But additional kudos go to the separate temp control, which sets the temperature automatically, yet still allows driver selection of the other functions. On the Toyota, any deviation from the auto setting—such as adjusting the fan speed—drops the entire system into manual mode.



Maxima

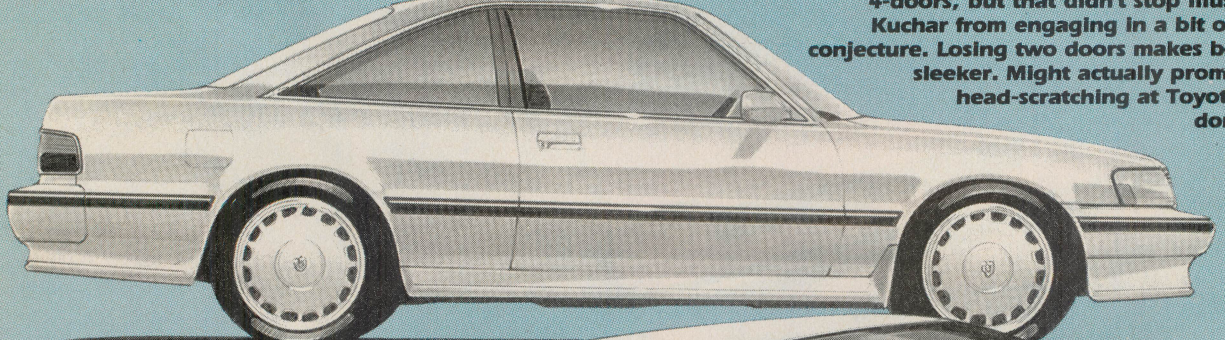


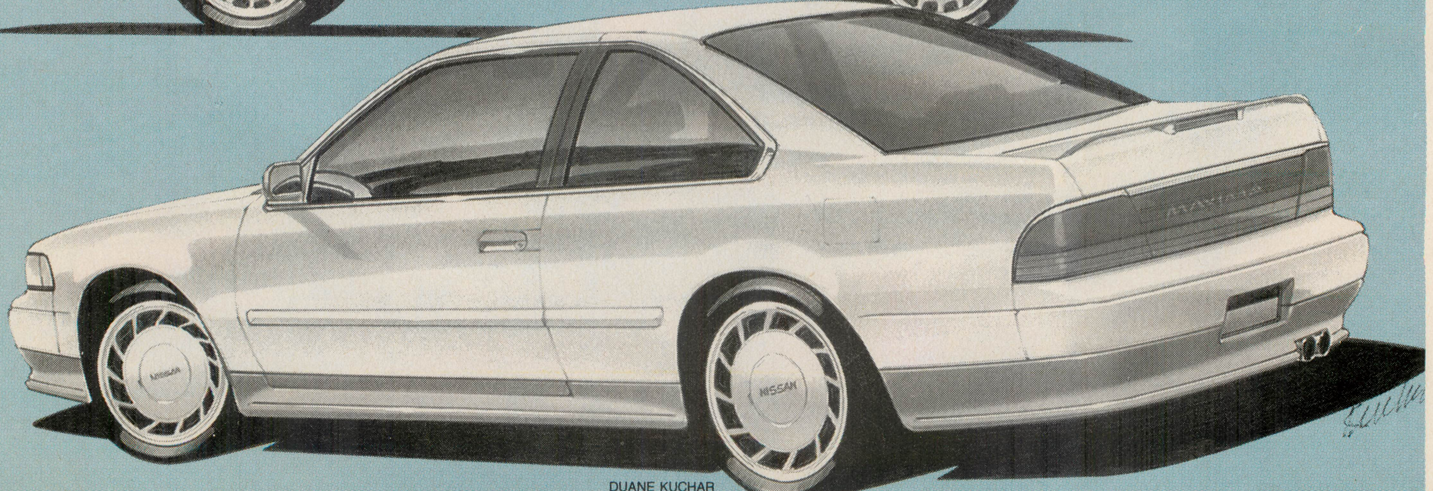
Cressida

Not all of Toyota's ergonomic experimentation missed the mark, however. The reworked power window switches make sense. The push-down/pull-up feature works well, as does the one-touch auto-down setting for the driver's window. Nissan's also done some jiggery-pokery with the window switches, angling them toward the driver on the armrest. Unfortunately, although the angle makes sense, the inside door pull blocks the two rear-window switches.

Of course, any miscues in the design of these two won't seriously detract from the main character of the cars. And to a large extent, it's the nature of the car that determines your preference. The Toyota leans primarily toward the traditional luxury buyer, the person whose tastes once had a distinctly homegrown bias. In both exterior and interior styling, the Cressida seems much closer to something from a Detroit design studio than anyone would have

Both the Maxima and Cressida were designed as 4-doors, but that didn't stop illustrator Duane Kuchar from engaging in a bit of pen and ink conjecture. Losing two doors makes both cars seem sleeker. Might actually prompt a round of head-scratching at Toyota and Nissan, don't you think?





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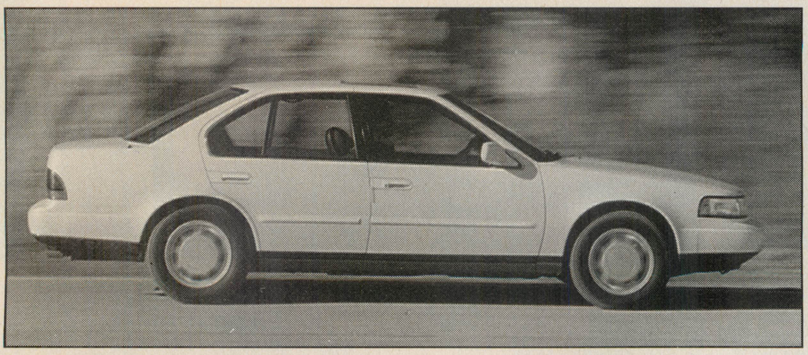


Nissan Maxima GXE

GENERAL
Vehicle mfr. .... Nissan Motor Co, Ltd., Chuo-Ku, Japan
Vehicle importer .... Nissan Motor Corp., USA, Carson, Calif.
Body type .... 5-pass., 4-dr.
Drive system .... Front engine, front drive
Base price $17,499
Price as tested $22,524

ENGINE
Type .... V-6, liquid cooled, cast iron block, cast alloy heads
Displacement .... 2960 cc (181 cu in.)
Compression ratio 9.0:1
Induction system .... Variable-induction electronic port FI
Valvetrain .... SOHC, 2 valves/cylinder
Max. power (SAE net) .... 160 hp @ 5200 rpm
Max. torque (SAE net) .... 181 lb-ft @ 3200 rpm
Emissions control .... 3-way catalyst, air injection
Recommended fuel .... Unleaded premium

DRIVETRAIN
Transmission .... 4-sp. auto.
Transmission ratios
(1st) 2.79:1
(2nd) 1.55:1
(3rd) 1.00:1
(4th) 0.70:1
Axle ratio 3.64:1
Final drive ratio 2.53:1

CAPACITIES
Crankcase .... 3.9 L (4.1 qt)
Fuel tank .... 70.0 L (18.5 gal)
Luggage .... 411 L (14.5 cu ft)
Range (city/hwy.) .... 625/982 km (389/610 mi)

SUSPENSION
Front .... Independent, MacPherson struts w/ single lower control arms, coil springs, gas-filled shocks, anti-roll bar
Rear .... Independent, Chapman struts, parallel links, gas-filled shocks, anti-roll bar

STEERING
Type .... Rack and pinion, power assist
Ratio 18.7:1
Turns (lock to lock) 3.1
Turning circle .... 11.2 m (36.7 ft)

BRAKES
Front .... 280 mm (11.2 in.), vented discs, power assist
Rear .... 208 mm (8.2 in.), drums, power assist
Anti-lock .... Optional

WHEELS AND TIRES
Wheel size .... 15 x 6.5 in.
Wheel type .... Cast alloy
Tire size & construction .... P205/65R15 steel-belted radial
Tire mfr. & model .... Bridgestone SF406

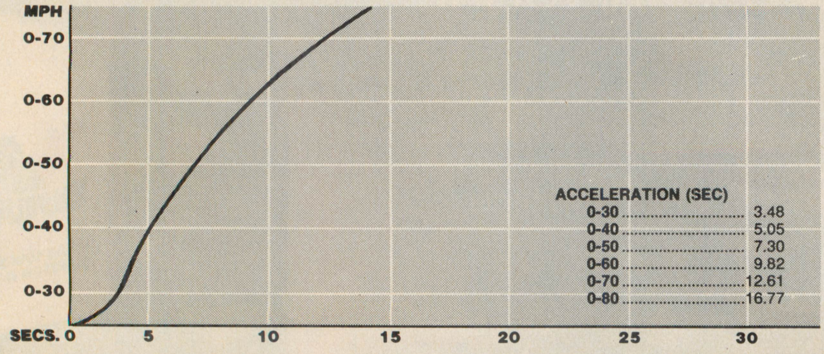
DIMENSIONS
Published curb weight .... 1430 kg (3153 lb)
Weight distribution, f/r 63/37%
Wheelbase .... 2650 mm (104.3 in.)
Overall length .... 4765 mm (187.6 in.)
Overall width .... 1760 mm (69.3 in.)
Overall height .... 1400 mm (55.1 in.)
Track, f/r .... 1510/1490 mm (59.4/58.7 in.)

SPECIFICATIONS
Power-to-weight ratio .... 19.3 lb/hp
Drag coefficient 0.32
Int. noise lvl. (at 60 mph) .... 68 dBA
EPA (city/hwy.) .... 21/33 mpg

MEASURED PERFORMANCE
QUARTER MILE
TIME .... 17.33 sec
SPEED .... 80.9 mph
BRAKING
60-0 .... 145 ft
30-0 .... 38 ft
SKIDPAD .... 0.77 g

SPEEDOMETER CALIBRATION

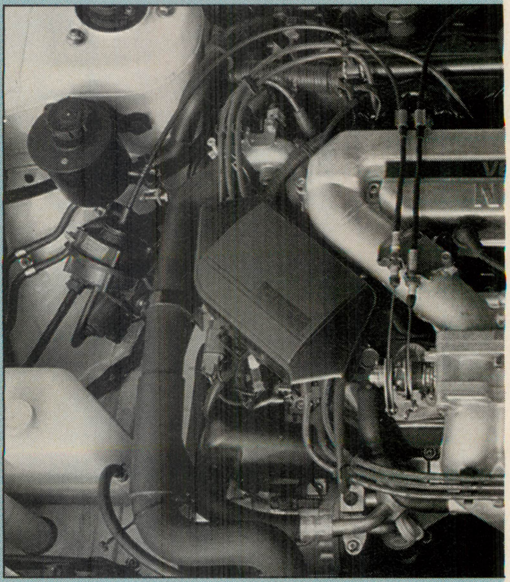
Indicated	30	40	50	60
Actual	30	40	50	60



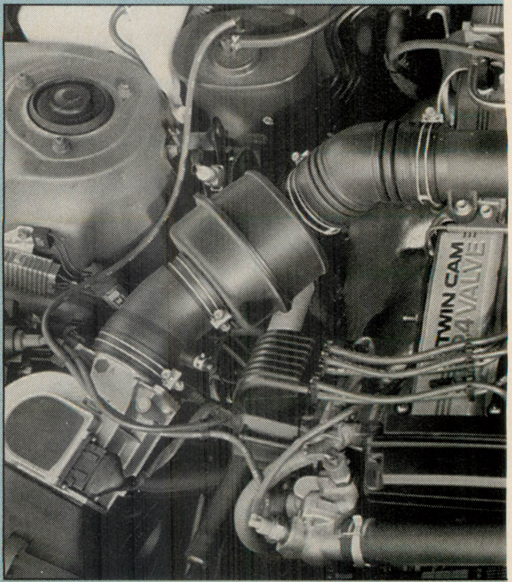
believed possible 10 years ago.

The Maxima, on the other hand, represents a departure from the traditional luxury car, at least in appearance. It seems to appeal to a younger audience, and the choice of either the luxury GXE or sportier SE not only supports that impression, but also points up one advantage it carries over the Toyota. Those who prefer the Maxima's styling but would appreciate something that might warm the blood a bit more than the GXE can have the option of choosing the 5-speed SE. But there's no such choice with the Toyota.

All of which brings us to the bottom line, both literally and figuratively. And here, the Maxima holds a decided edge. The base price for the GXE undercuts the Cressida by a cool $4000. When you eliminate several of the questionable options on our test



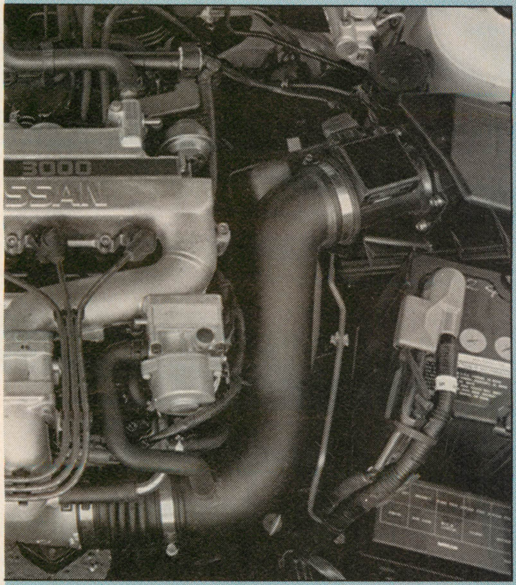
Maxima

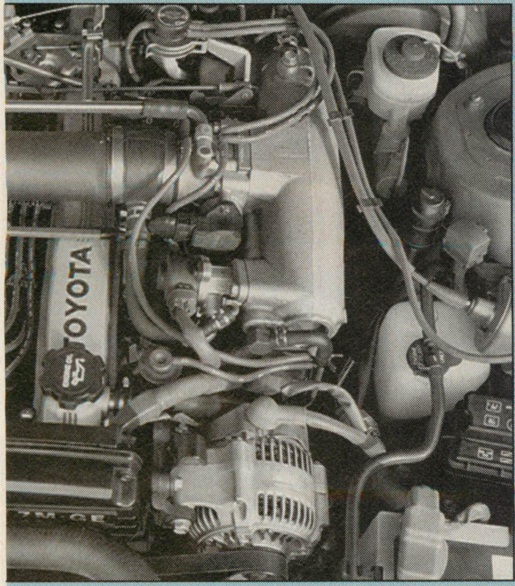


Cressida

car, such as the leather seats and electronic equipment package, the as-tested gap widens to more than five grand. Considering the nearly identical performance of the two cars, that's a fairly sizeable advantage.

But the real difference between the Cressida and Maxima is the difference between sirloin steak and nouvelle cuisine. It seems that distinction continues through the two new upmarket divisions, with Lexus following the path of BMW and Mercedes while Infiniti takes a slightly different direction. What makes that future bout even more interesting is the price of admission, which has been bumped up another $10,000 from our test cars, with equipment levels to match. Considering what the current entry fee will buy, those are tickets we'll gladly reserve in advance. MT





TECH DATA

Toyota Cressida

GENERAL

Vehicle mfr.	Toyota Motor Co., Ltd., Toyota City, Japan
Vehicle importer	Toyota Motor Sales USA, Torrance, Calif.
Body type	5-pass., 4-dr.
Drive system	Front engine, rear drive
Base price	$21,498
Price as tested	$25,190

ENGINE

Type	Inline 6, liquid cooled, cast alloy head, cast iron block
Displacement	2954 cc (180.2 cu in.)
Compression ratio	9.2:1
Induction system	Electronic port FI
Valvetrain	DOHC, 4 valves/cylinder
Max. power (SAE net)	190 hp @ 5600 rpm
Max. torque (SAE net)	185 lb-ft @ 4400 rpm
Emissions control	3-way catalyst, EGR
Recommended fuel	Unleaded premium

DRIVETRAIN

Transmission	4-sp. auto.
Transmission ratios	
(1st)	2.80:1
(2nd)	1.53:1
(3rd)	1.00:1
(4th)	0.71:1
Axle ratio	3.91:1
Final drive ratio	2.78:1

CAPACITIES

Crankcase	4.6 L (5.2 qt)
Fuel tank	70 L (18.5 gal)
Luggage	353 L (12.5 cu ft)
Range (city/hwy.)	566/715 km (352/444 mi)

SUSPENSION

Front	Independent, MacPherson struts, lower control arms, coil springs, hydraulic shocks, anti-roll bar
Rear	Independent, upper and lower control arms, coil springs, hydraulic shocks, anti-roll bar

STEERING

Type	Rack and pinion, speed-sensitive power assist
Ratio	19.4:1
Turns (lock to lock)	3.6
Turning circle	10 m (32.8 ft)

BRAKES

Front	279 mm (11.0 in.), vented discs, power assist
Rear	272 mm (10.7 in.), vented discs, power assist
Anti-lock	Bosch

WHEELS AND TIRES

Wheel size	15 x 6.0 in.
Wheel type	Cast alloy
Tire size & construction	195/65HR15 steel-belted radial
Tire mfr. & model	Bridgestone SF405

DIMENSIONS

Published curb weight	1550 kg (3417 lb)
Weight distribution, f/r	53/47%
Wheelbase	2680 mm (105.5 in.)
Overall length	4816 mm (189.6 in.)
Overall width	1709 mm (67.3 in.)
Overall height	1364 mm (53.7 in.)
Track, f/r	1455/1455 mm (57.3/57.3 in.)

SPECIFICATIONS

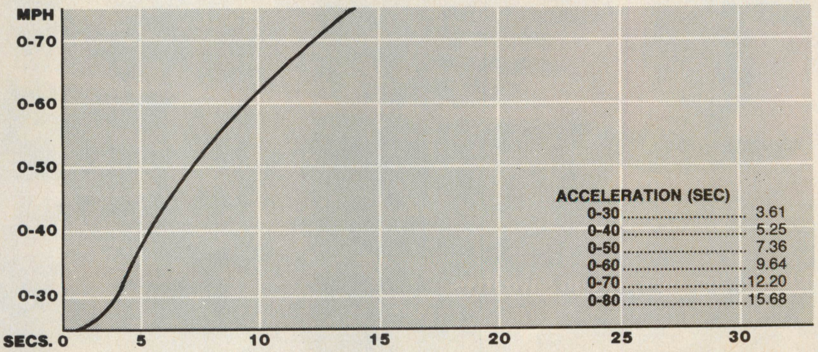
Power-to-weight ratio	18.0 lb/hp
Drag coefficient	Not available
Int. noise lvl. (at 60 mph)	66 dBA
EPA (city/hwy.)	19/24 mpg

MEASURED PERFORMANCE

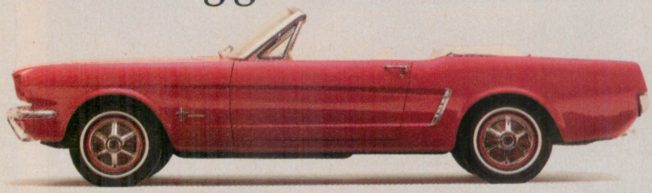
QUARTER MILE	
TIME	17.27 sec
SPEED	84.2 mph
BRAKING	
60-0	134 ft
30-0	34 ft
SKIDPAD	0.80 g

SPEEDOMETER CALIBRATION

Indicated	30	40	50	60
Actual	30	40	50	60



Ford Mustang 1964:
Something great to look back on.



It was so new in '64. Young. Bold. Eager to kick in and run. It was a whole new breed of automobile. And although its success encouraged the creation of a multitude of copies, there's *still* nothing quite like Ford Mustang.

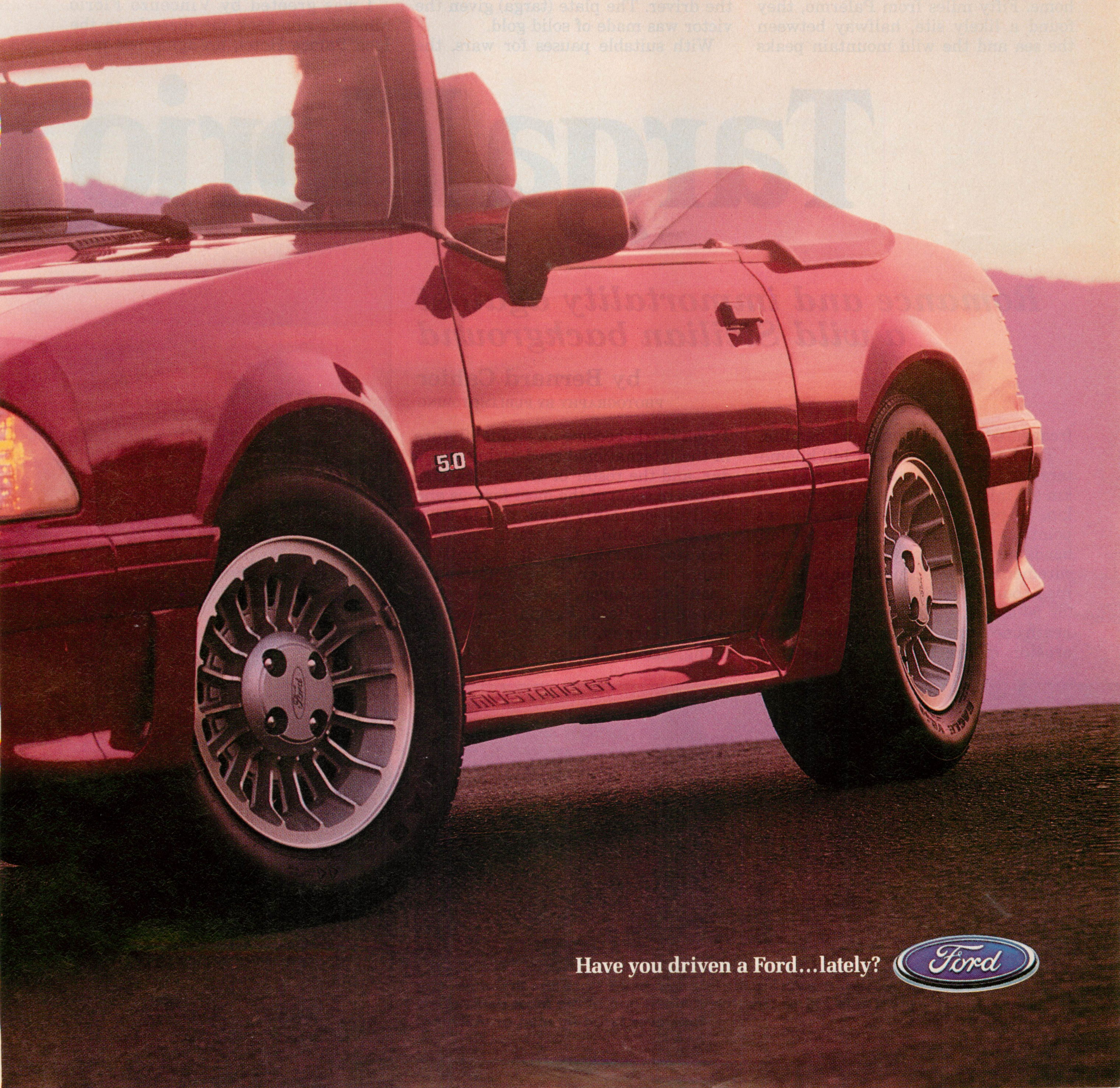
The 1989 Mustang GT is the ultimate

Ford Mustang 1989: Something great to look forward to.

Mustang. The combination of a 5.0 liter V-8 engine delivering 225 horsepower at 4,200 RPM, quick-ratio power steering, unidirectional tires and Ford's Quadra-shock rear suspension make it technically more advanced than its predecessor. Yet, after 25 years of evolution it's still youthful, still vigorous, still Mustang. And a mere touch of the throttle can still release the magic that is *only* Mustang.

Ford Mustang. An object of America's affection for 25 years.

Ford Mustang GT



Born in 1906 on the wild and colorful shores of northern Sicily, the Targa Florio was the brainchild of that unforgettable Sicilian nobleman, Cavaliere Vincenzo Florio. In those days, Sicily was still essentially feudal, and land owners got away with just about anything their nobility could command and their wealth could afford.

The young Vincenzo was fanatical about boats, planes, cars—in fact, anything that included speed and daring—while his wealth was adequate to nearly any task he might assign it. Not yet 24, this young speed freak decided to enlist the aid of his friends to organize a road race on the island he called home. Fifty miles from Palermo, they found a likely site, halfway between the sea and the wild mountain peaks were), mudslides, rockslides, and earthquakes, encouraged by a rumbling volcano that provides much of the island's entertainment.

May 6, 1906, dawned clear and bright for the first running of the Targa Florio. The young race promoter had invited friends and rivals from all over Europe to come for his inaugural event, and come they did, by rail and steam yacht, to spend a holiday in the warm Mediterranean sun.

Covering a distance of 446 km, the first race was won by Alessandro Cagno in 9.5 hours, averaging 29 mph with his Itala, an almost unbelievable speed, considering the circuit conditions and physical demands made on the driver. The plate (targa) given the victor was made of solid gold.

With suitable pauses for wars, the serati, Moss, Musso, Nazzaro, Neerpasch, Nuvolari, Redman, P. Rodriguez, R. Rodriguez, Scarfiotti, Siffert, Taruffi, Vaccarella, Varzi, Villoresi, von Hanstein, von Trips.

In 1953, when I was working for the French magazine *L'Action Automobile*, its mighty boss, L.V. Rouselle, sent me to Italy where an old friend of his, Vincenzo Florio, was organizing a famous road race. Travel to Sicily in those days was true adventure, so rather than going by car and boat, which would have taken several days, I decided to fly from Paris to Rome. The old DC3 I boarded landed me practically in the heart of Palermo on what was once a World War Two military airport.

I was greeted by Vincenzo Florio himself, who took me directly to the Igea Palace Hotel, an aging but pres-

Targa Florio

Romance and immortality against a wild Sicilian background

by Bernard Cahier

PHOTOGRAPHY BY PUBLIMOTORING

frequented only by goats and bandits.

The first circuit covered 140 kilometers per lap; it was soon reduced to 72 km (43 miles), retaining 700 bends per lap, 10 per km, 16 per mile. But it's pointless to discuss kilometers per lap, bends per lap, or any statistical measurements as one might for a stable road course. Nothing about Sicily was (or is) stable, including the earth beneath one's tires. There was always the erosion of the roads (such as they Targa Florio became an annual fixture in the international road-racing calendar, and the roster of drivers contains names of some of the most famous and skillful—certainly some of the most brave: Anselmi, A. Ascari, Baghetti, Bandini, Barth, Biondetti, Boillot, Bonetto, Bonnier, Bracco, Campari, Castellotti, Chiron, Collins, Cortese, de Adamich, Elford, Fangio, Gendebien, Goux, Gurney, Hawthorn, P. Hill, Kling, Lancia, Lurani, Maglioli, Ma-

Although the racing surface improved since the first days, the treacherous Targa Florio circuit remained one of the most demanding tests ever faced by man or machine.

tigious monument to Sicily's Golden Epoch. Signore Florio was a gracious host, with a heart of gold, but he had such a strong personality that most people were intimidated by his imperious manner and commanding voice. Fortunately for me, I was adopted into his big family and received all the privileges attendant thereto. I was provided with a tiny Fiat Topolino, and—after a few pit stops for an overheated mouse—I finally discovered the Targa Florio! The sights were magnificent, and the 72 km of this mountain circuit were so difficult it took me two hours to finish.

Lancia had decided to make a major return to racing that year, entering several of the new DOHC 3-liter V-6 coupes to be driven by famous road race champions Bonetto, Taruffi, Bracco, and Maglioli. The renowned engineer, Vittorio Jano, and Gianni Lancia had both come. While a very professional team, the members were quite relaxed and always up to some kind of joke. The first one they played on me was to take me for a ride around the circuit. The experience was unforgettable and is not recommended for anyone with heart problems.

Bonetto, the previous year's winner, was fearless in the true tradition of mad Italian drivers such as Nuvolari and Bracco. In those days, there were no official practice periods; we had to share the narrow, winding roads with ordinary traffic, blind corners, donkey carts, the lot. It was into such chaos that Bonetto drove me at full racing speed to the extreme joy (and great fear) of the local populace. At one point, we found a donkey cart nearly blocking the road. No problem for Bonetto: He put two wheels on the dirt shoulder and squeezed by so closely that the cart's sharp hub opened the side of the Lancia like a tin of anchovies. By that time, I had lost my fear. With no safety belt, I was just too busy staying in the car to find time to be afraid.

When we finally got back to the pits, the whole Lancia team was there to greet the remains of the French journalist. As I weakly extracted myself from the car, Bonetto came to me and said, "You know, few people could take that sort of ride. You're okay." After that, we were best friends.

A few months later, he lost his life while leading the Carrera Panamericana race.

The 1953 Targa Florio was won by Maglioli. Bonetto never got to start. He had a head-on collision with another car while enroute to the starting line!

In 1954, Taruffi made it three in a row for Lancia; but in 1955, Lancia and Alfa Romeo retired from racing, leaving Maserati and Ferrari to defend Italian racing honor.

Gordon Crosby captured some of the flavor of the Targa Florio with this duel between a Bugatti and an Alfa Romeo painted around 1930.

The magnificent battles waged between Mercedes, Maserati, Ferrari, and Jaguar for the 1955 Sports Car Championship endowed the end-of-season Targa Florio with a greater than usual importance, as the title would be decided there. Mercedes made another German invasion of Sicily with scores of cars and tons of material. It was overwhelming; as expected, they won both race and title. Thanks to Castelotti's splendid drive at the wheel of a big and difficult-to-control 4.4-liter Ferrari, Mercedes really had to work to overcome the Italian car and driver. Yet he still might have won had it not been for the superb driving of a pair of young Englishmen, Moss and Collins. As always, I was permitted to circulate the track during the race with the 000 car. It was great fun and allowed me to see the race from various scenic points, as well as to take photos and collect drivers who had crashed.

At one place, and at a great distance, I saw Stirling Moss plunging his way downhill through a field of artichokes. Since he couldn't get back up, he wisely drove down to rejoin the road where it made a big loop. Another time, his car got stuck in dirt; immediately, and coming from every direction, scores of peasants arrived and pushed his car, with him in it, all the way back onto the road, where he got things sorted out and went on to win. Fangio came in 2nd and Castelotti 3rd.

In 1956, one month before the Targa Florio, I was at the Nürburgring for the 1000km race with my good friend Maglioli. He had already won the Targa Florio once and was one of the best drivers for that sort of race. One evening, while I was talking with Ferry Porsche and Huschke von Hanstein, I said, "Why don't you send an RS 1500 for Maglioli to drive in the Targa?" They thought the idea worthwhile. For their first try at the Targa Florio, Porsche won the event with Maglioli driving the entire 450 miles single-handed.

When I arrived to compete in the 1957 Targa Florio, it had become a national contest for Italians only. In fact, it had been turned into a sort of national rally. This peculiar set of circumstances resulted from the disastrous accident and death of bystanders in the Mille Miglia of that same year. Such was the power of Vincenzo Florio that, when I was turned down at the drivers' registration for not having an Italian competition license, he went a little mad and terrified the officials into giving me a national license so I could compete. At the awards ceremony, I was received with great courtesy and presented with a large trophy for Best Placed Foreign Entrant (and, of course, the only one).

All the time Vincenzo Florio was alive, and even after he died, I saw friends around me being robbed, or having hostile contact with members of the local population. But, during the 20 years I covered the Targa Florio, I never had any such unpleasant experience. It happened all around me, but never to me. One day I realized that I had had a very special friend in Vincenzo Florio and that his friendship had protected me in Sicily. Years later, when Ford Motor Company wanted to present its new 1983 line of cars in Sicily and selected Targa Florio roads for

My first encounter with the Targa came during practice for the '53 event as a passenger in a 3-liter Lancia D20 piloted by the gifted Felice Bonetto. Bonetto died later that year while driving in the Carrera Panamericana.

William Bradley, veteran autojournalist who covered every Targa event until his death in the mid-'60s, checks out an unfortunate Maserati during the '55 contest.

Working conditions were primitive even for the Lancia team, which claimed victory in 1953, thanks to Umberto Maglioli.

American John Fitch exits the pit in a Mercedes-Benz 300SLR during the '55 Targa. A pair of SLRs driven by teammates Stirling Moss and Juan Manuel Fangio finished 1st and 2nd.

the testing route, their representative called and asked if I still had any good connections in Sicily. Indeed I did, and thanks to my old friends at the Automobile Club of Palermo, Ford was able to receive several hundred journalists during six weeks of new-car previews without the slightest incident, not even a missing wheel!

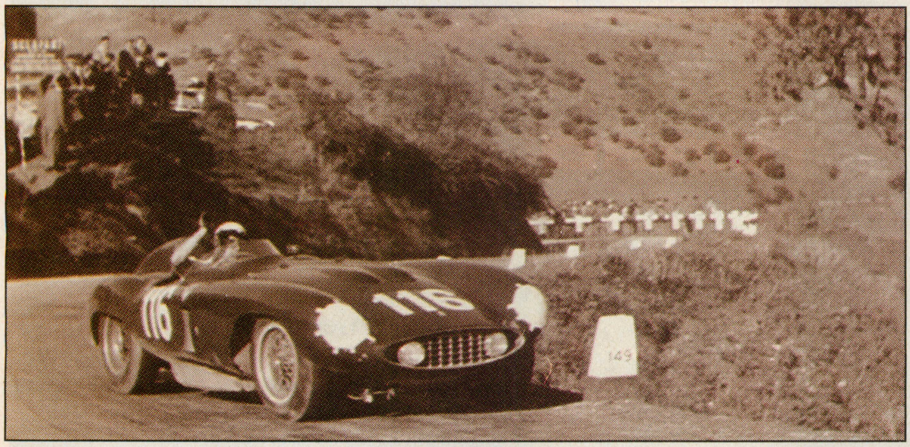
In 1959, the well-known English journalist and race driver, Tommy Wisdom, asked me to join him in the

Targa Florio with an Austin-Healey Sprite. Needless to say, I accepted, and we ran one of the longest Targas ever—over 1000 km and 11 hours for the winners, Barth/Seidel (Porsche), and 12 hours for us.

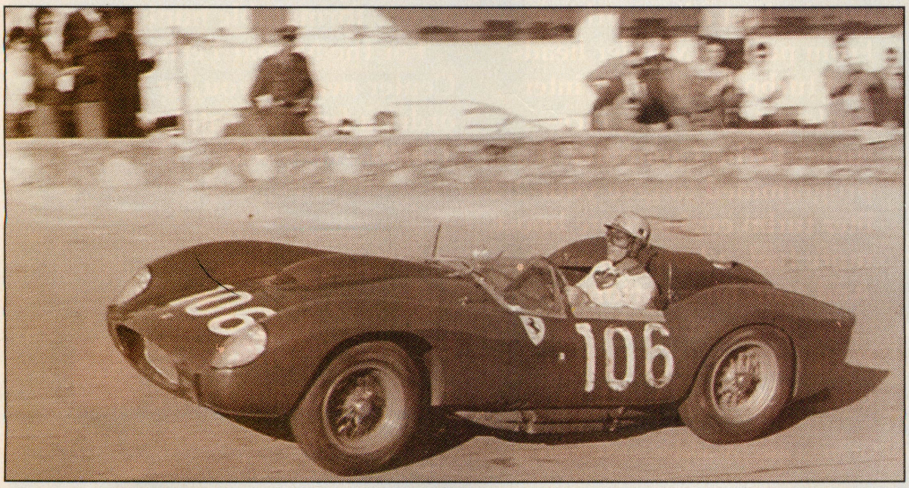
The Sprite had a small fuel tank, and, since Ferrari had a convenient fuel stop in the mountains, I decided to use it, too. The first time I came in everyone laughed but I knew all the mechanics and was off with 40 liters of gas in no time. Team Manager Tavoni had one of the shocks of his life when a message came through on his radio that Cahier had just refueled!

Barone Pucci, who had a villa about halfway around the circuit, was codriving with the local hero, Nino Vaccarella, a first-class driver who knew every inch of the 72km course. A fellow baron, Huschke von Hanstein, soon noticed Pucci's talents and, in 1964, Pucci won the Targa with a Porsche 904.

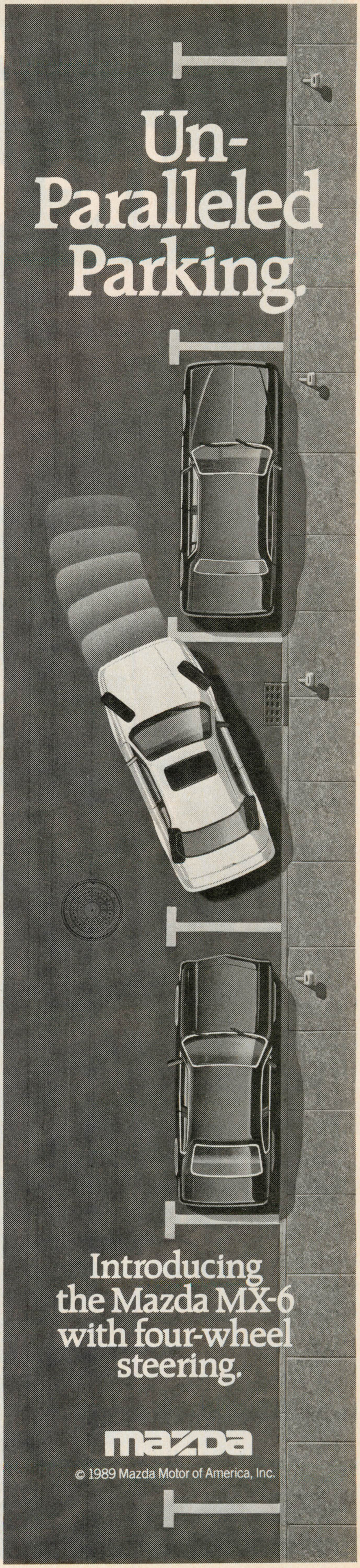
During the last lap of our long race, the throttle cable broke, and Wisdom managed to salvage our day by blocking the throttle rods of the twin carburetors at useable rpm, then



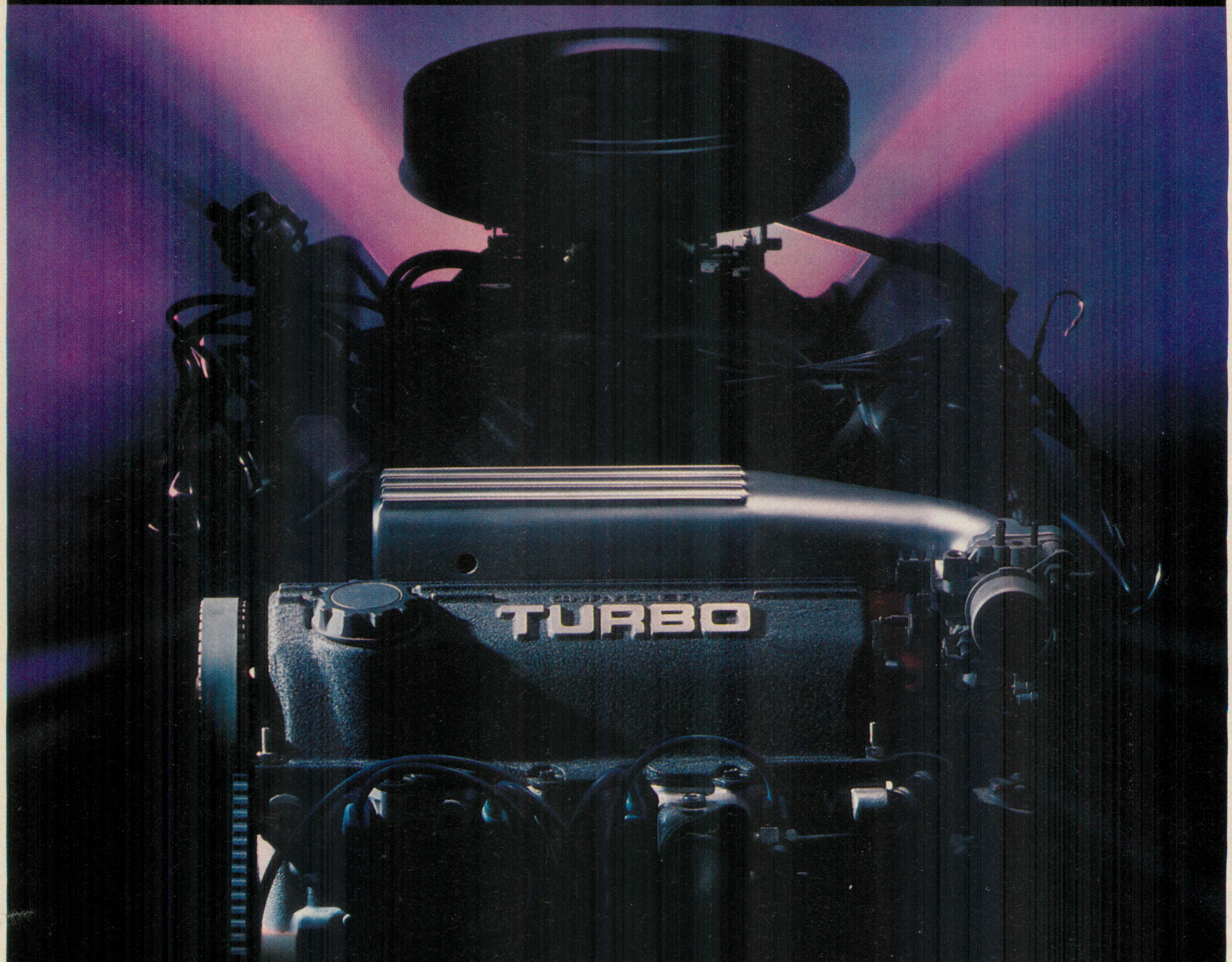
Fast, flamboyant, and one of the most popular drivers in Italy, Eugenio "le Beau" Castellotti takes a moment to wave to the fans while muscling his 3.5-liter Ferrari to a 3rd-place finish in 1955.



The Targa was a favorite stomping ground for the powerful Ferrari Testa Rossa. In 1958, Luigi Musso co-drove one to victory with Oliver Gendebien.



A chip off the ol' big block.



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switching the engine on and off with the ignition key. He finished the race to the cheers of the crowd.

We had finished 3rd in our class, and the Cavaliere Florio gave us beautiful trophies, which I suspect should have been presented to better finishers! It was a warm and wonderful gesture on his part, and the last expression of his friendship to me, since he died, alas, a month later.

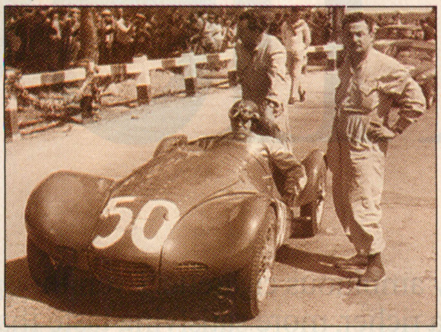
With Vincenzo Florio gone, the Targa Florio had lost part of its soul, but faithful friends continued to carry its flag high, and to the end, it remained an exceptional race.

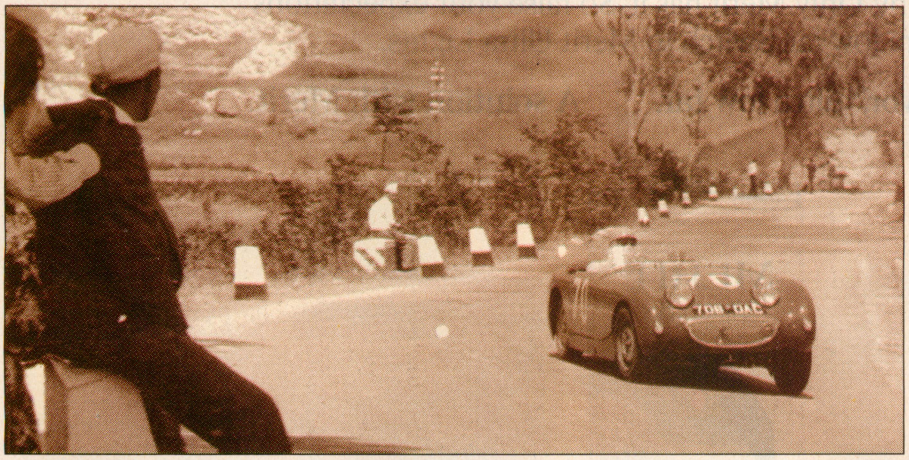
In 1963, BMC came out with a fast version of the Mini-Cooper S. I was a close friend of Sir Alec Issigonis, the designer, and also a good friend of one of the best tuners of his engines, Daniel Richmond. Daniel loved Krug champagne, and it was in his small, disorderly office that we decided, while sharing a bottle of the tasty bubbly, to run the Targa Florio.

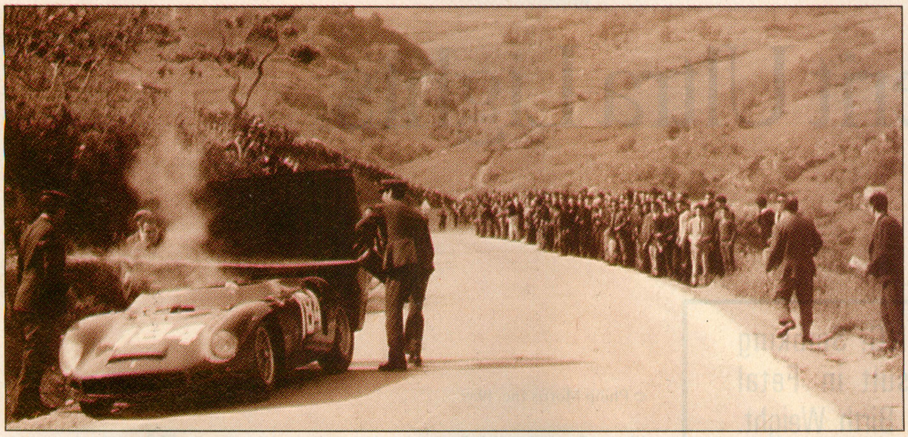
Another friend, Prince Metternich, a true gentleman driver and president of the German Automobile Club, became interested, and we all joined forces to campaign one of the little cars in the upcoming event.

With the Prince came Daniel Richmond, his wife, an engineer from BMC, and one mechanic. The whole team was quite colorful, and—because we are people who like good living—a Belgian princess, friendly with Prince Metternich, took charge of our meals. The Targa Florio is a long race and, thanks to the princess, we had an inexhaustible supply of the most mouth-watering delicacies imaginable, including fresh lobster, chilled champagne, and fine wines.

Right from the start, our Mini-Coo-


Despite its frighteningly narrow tires, this petite Bandini special claimed 750cc class honors in 1956.


British auto writer Tommy Wisdom and I co-drove this Austin-Healey Sprite to 3rd in class in the '59 Targa, although we needed 12 hours to cover the distance.


Although a courageous lot, fire crews in the early '60s were still a bit weak in the aim department, as the driver of this smouldering Ferrari can attest.

Over-achiever.

This is an extremely ambitious cigarette. Even though it is an ultra light, it promises to deliver a richer, more satisfying taste than you'd ever expect at such low tar levels. And judging by the fact that it has quickly become one of America's fastest growing brands, Merit Ultra Lights is fulfilling that promise. Enriched Flavor™ is the reason why. Only Merit has it. So raise your expectations of ultra low tar. Switch to Merit Ultra Lights.

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Merit Ultra Lights

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Kings: 5 mg ''tar,'' 0.5 mg nicotine av. per cigarette by FTC method.

per was the idol of the crowd. It was the smallest car in the race, it was noisy, it was spectacular, and it was a true underdog!

Lining the 72km circuit were at least 300,000 spectators, and they all cheered the Mini each time it went by. After a couple laps, the water temperature went up, and when I stopped in the pits, I was told that our engine had a porous cylinder head. In the 90° heat, this was liable to get serious. Since two full laps with disappearing coolant was out of the question, I decided to stop up in the mountains, near the halfway mark, where I knew there was a group of enthusiastic supporters. Sicilians are quick to react; when they grasped the problem, they organized a lightning fast pit stop with water, orange juice, and snacks. It worked beautifully, and the crowd was so pleased to see us finish the race that during the last lap, people everywhere were throwing flowers on the valiant little Mini.

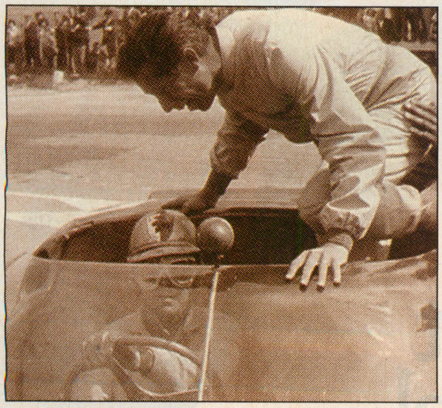
Two years later, I co-drove with the late Rob Slotemaker, proprietor of the skid school at Zandvoort.

In 1964, Carroll Shelby decided to make a landing in Sicily with his Cobras. It was an ambitious operation since the Ferrari GTOs were obviously much better suited to the course than the powerful but clumsy Cobras. Shelby brought a marvelous cadre of colorful drivers, among them Dan Gurney, Phil Hill, Jerry Grant, Bob Bondurant, and Masten Gregory. To this merry band, he added two local drivers, Coco and Arena.

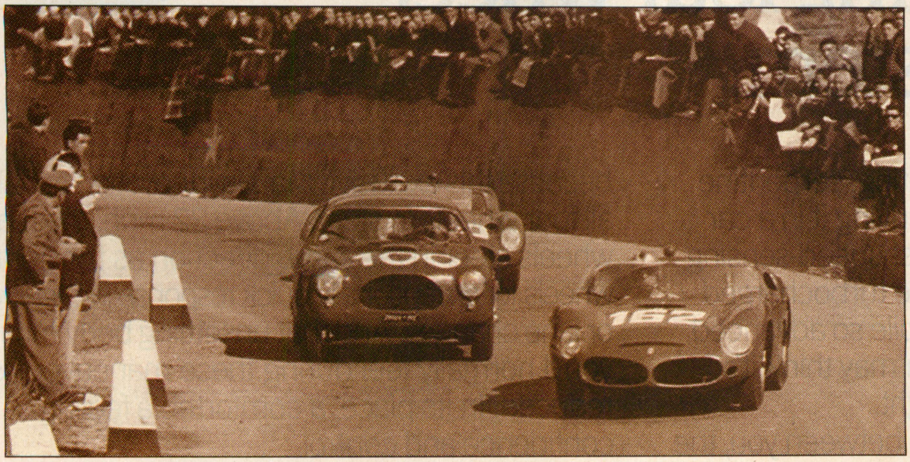
The Cobra team came early and, as usual, practice cars were Fiats rented from Hertz and Avis, which just might manage to make it back to the airport at the end of the program.

Phil Hill knew the Targa Florio well; his experience was most valuable for the team of Targa rookies, and a minimum of rental Fiats fell victim to unofficial practice. Finally, one Cobra was allowed out for serious practice, and Jerry Grant became so fired with Targa Florio spirit that his wild ride through narrow streets of crowded villages got the unfriendly attention of some of the residents. At one point, he was confronted by a road block with shotguns pointed at his generous belly, while a recommendation was made that he slow down out of consideration for the bambini. He did.

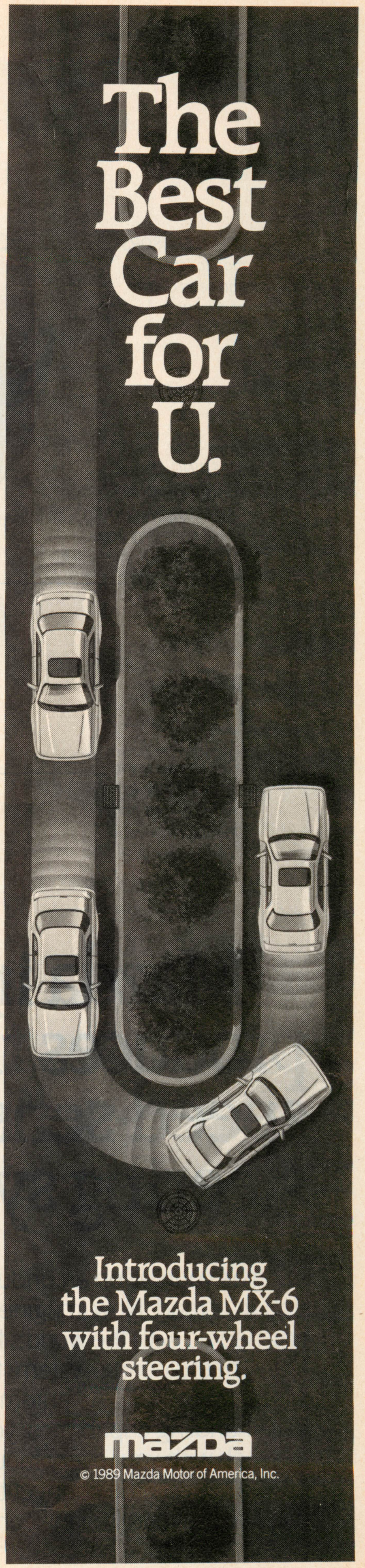
During the race, thundering Cobras were jumping and sliding in every direction. They were the crowd's favorites, and having two Sicilians driving

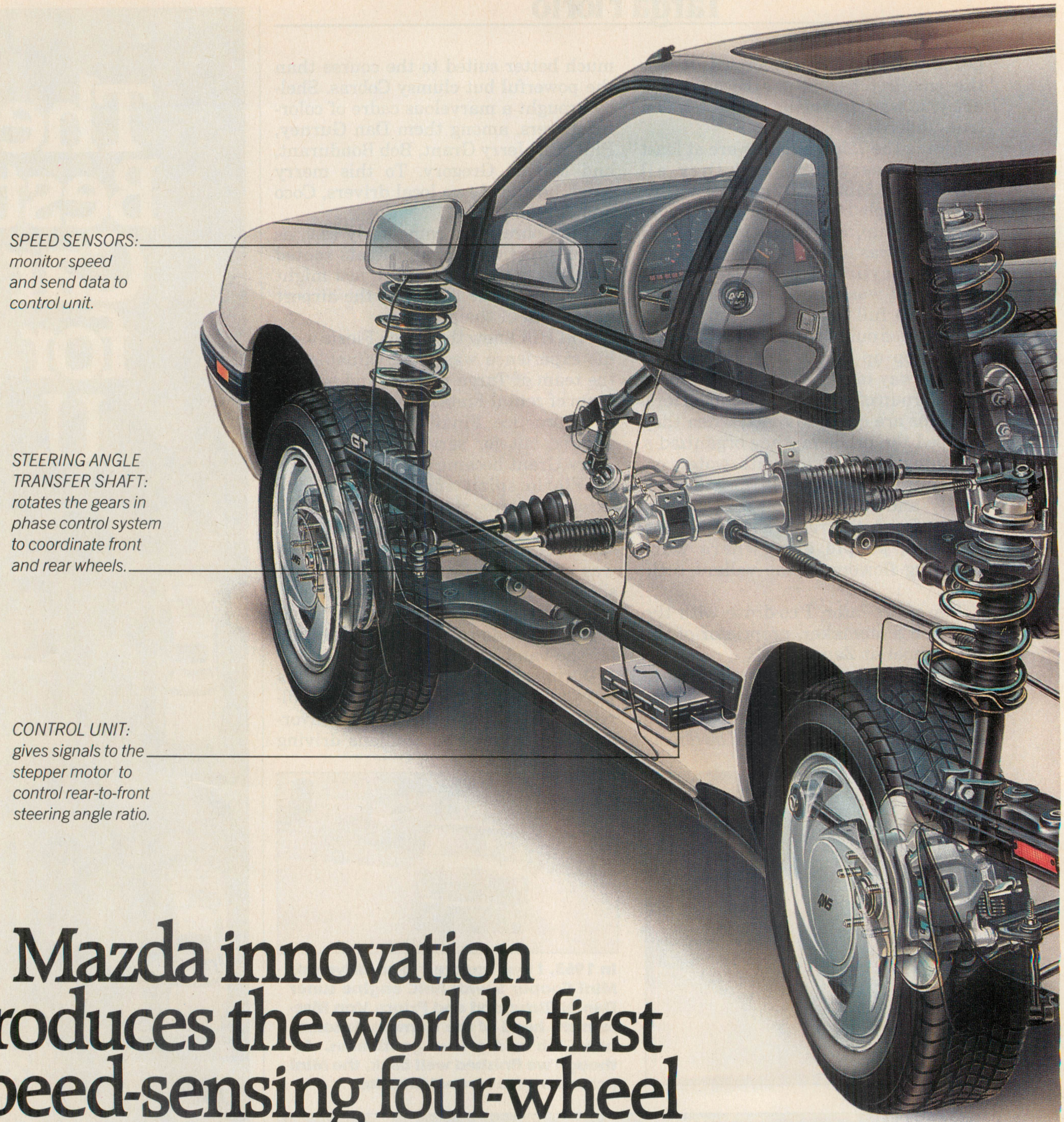


In 1963, I was honored to co-drive this Mini Cooper S with BMC engine tuner Daniel Richmond and Prince Von Metternich, head of the German Automobile Club and a true gentleman. Although we finished well back, the Mini proved a great crowd favorite.



Count Wolfgang von Trips put his Dino Ferrari 2400 across the finish line first at the '61 Targa, much to the delight of co-driver Oliver Gendebien, who offered his congratulations in victory circle.





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Below 22 mph, the rear wheels steer in the

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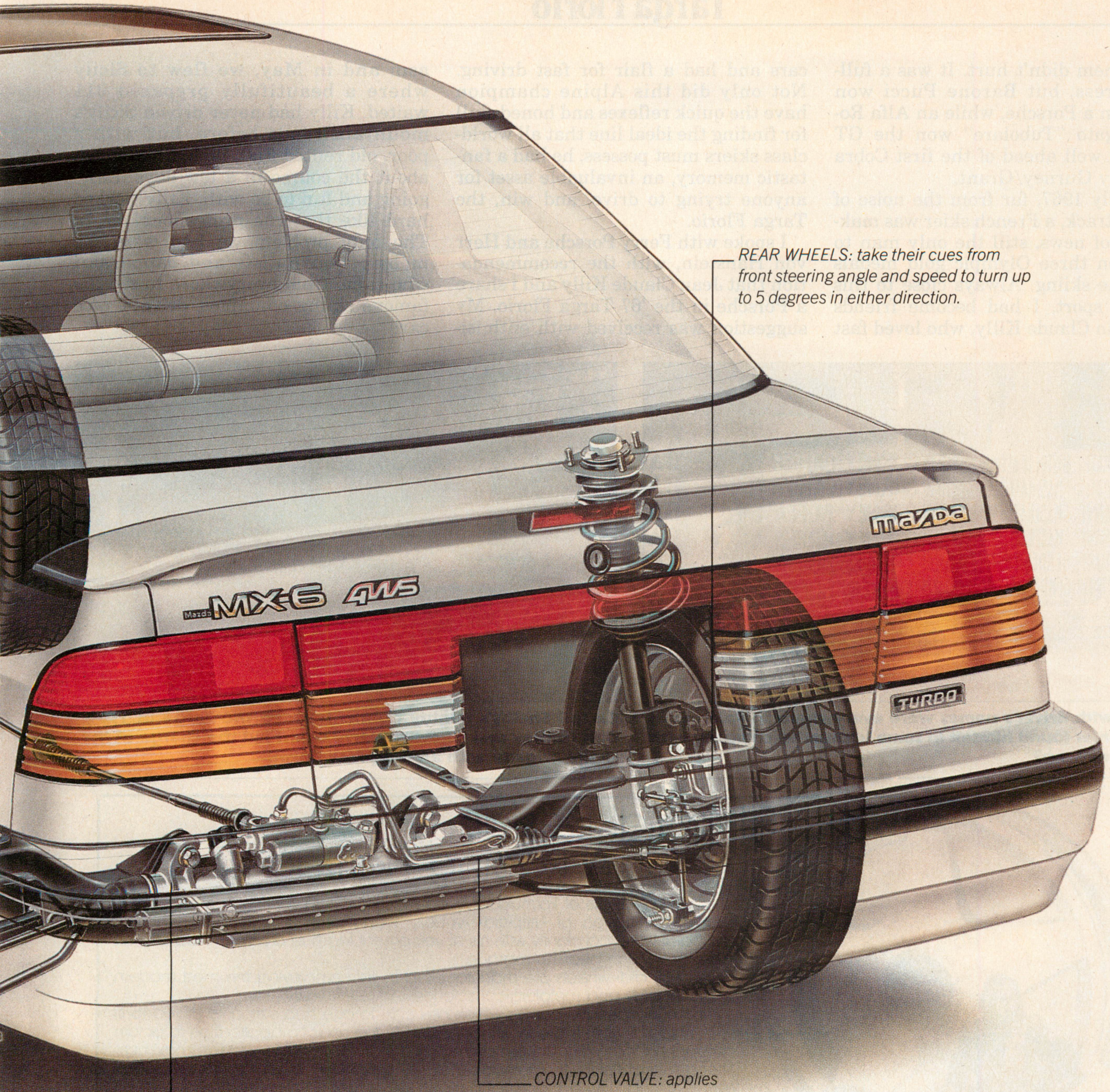

opposite direction of the front wheels to provide increased maneuverability for situations such as U-turns and parallel parking.

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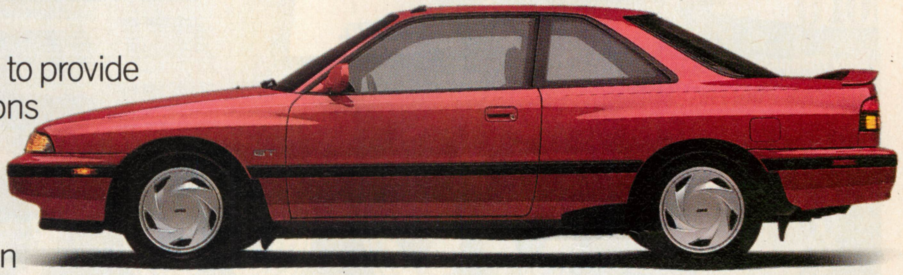


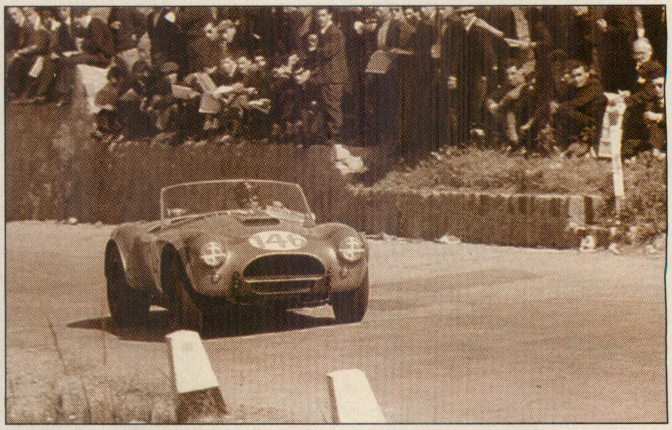
mazda

one of them didn't hurt. It was a full-court press, but Barone Pucci won overall in a Porsche, while an Alfa Romeo Zagato "Tubolare" won the GT category well ahead of the first Cobra driven by Gurney/Grant.

In early 1967, far from the noise of the racetrack, a French skier was making lots of news, still the only man to have won three Olympic gold medals in Alpine skiing. Always close to this exciting sport, I had become friends with Jean Claude Killy, who loved fast cars and had a flair for fast driving. Not only did this Alpine champion have the quick reflexes and honed skill for finding the ideal line that all world-class skiers must possess, he had a fantastic memory, an invaluable asset for anyone trying to drive, and win, the Targa Florio.

I spoke with Ferry Porsche and Herr von Hanstein, with the recommendation that Jean Claude Killy and I share a Porsche in the '67 Targa Florio. My suggestion was received with enthusiasm and in May, we flew to Sicily where a beautifully prepared 911 waited. Killy had never driven Sicily's mountain roads before, but with a poor, old rented Fiat, he learned much about the course in a few days. Easy-going and fun to be with, Killy worked hard like the true professional he is. The only problem we had were the mobs of journalists and papparazzi who came from everywhere to see the famous skiing champion drive a race car.

Posters with driver's names were everywhere in Palermo in 1964. Cahier found himself in some impressive company with Dan Gurney, no?


Carroll Shelby's mighty Cobras invaded the Targa in 1964. Dan Gurney and co-driver Jerry Grant led the charge of the snake brigade with an 8th-place finish.

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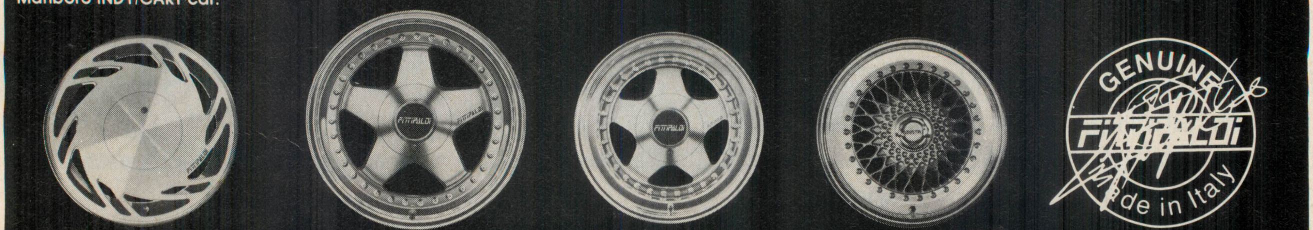

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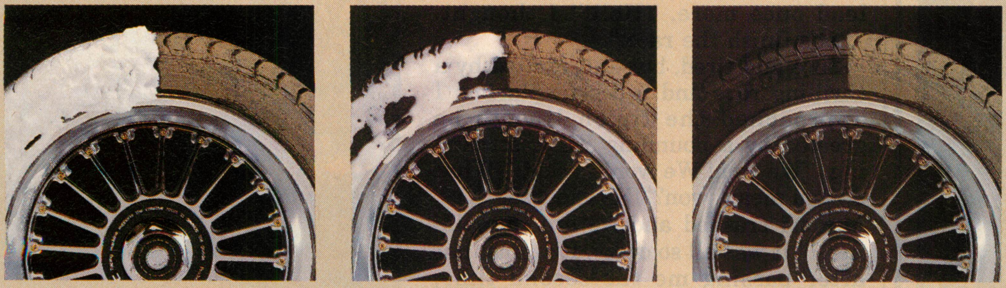

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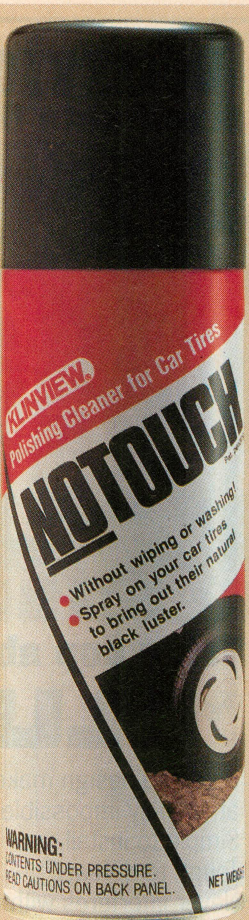


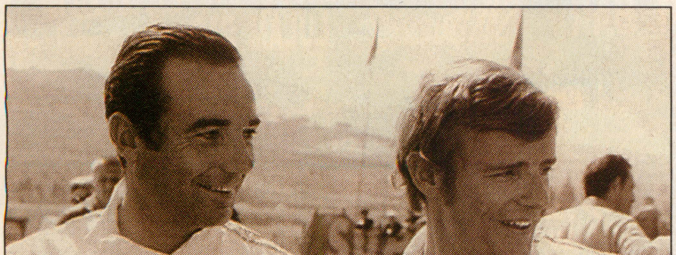
Targa Florio

Another big attraction that year was the appearance of the fantastic Chaparral. Technically advanced, and driven by Hap Sharp and Phil Hill, Jim Hall's car was very popular with the Sicilians who fondly recalled the Cobras from 1964.

Our Porsche 911 was entered in the GT division, and we had our work cut out for us—a long battle with scores of 911 Porsches and a handful of works Lancias. I took the start and the first 3-hour leg. Killy drove fast and clean, and when he gave me back the car for our last relay, we were the first of the Porsches (in the class) but behind Munari's Lancia.

During the last lap, Munari—who had started behind me (one car starts each minute)—caught up and began dancing around in my rearview mirror like some kind of a dervish, tossing stones and dirt, and sliding all over the road. I realized that attempting to hold him off was out of the question, so I let him by.

In the final portion of the course, a treacherous downhill section, I nearly flipped to see Munari approaching from my rear as wildly as before. I drove a little harder, but he was not to be denied, so I let him pass me again. Evidently, he had run off the road af-



French ski star Jean Claude Killy also proved an excellent race driver. He and I shared a factory-prepared Porsche 911 in 1976 and were lucky enough to take 1st in GT class and 7th overall.

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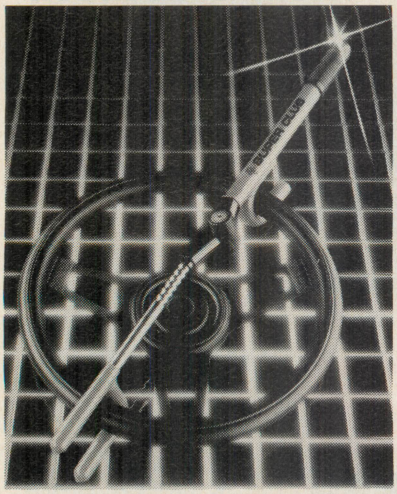

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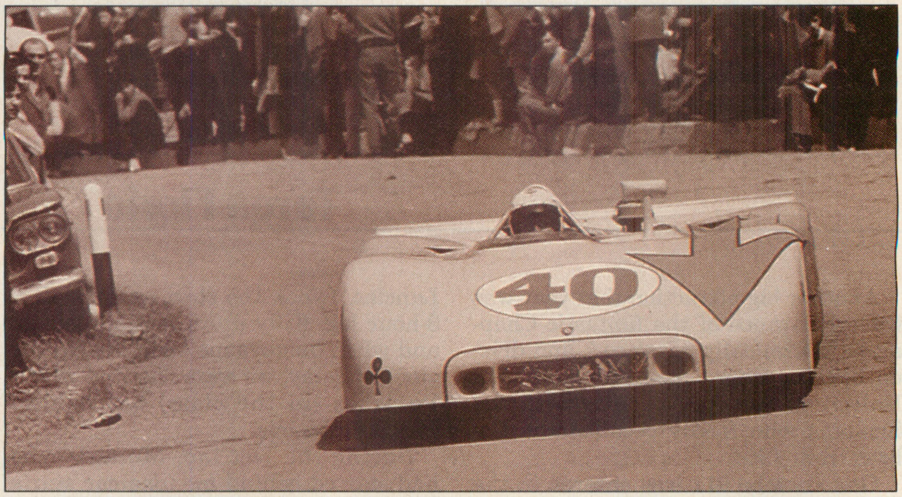
ter passing me the first time, and my letting him by had put him back in the lead once more. "Hell!" I thought. "Let's finish the race."

Sore and tired, but still excited by a thrilling race and a decent placing, I approached the finish line to be greeted by a bounding Killy, screaming, "We won! We won!" I said, "What do you mean, won?" He shouted, "Yes, Munari crashed and we are the winners!" It was all so crazy. It seems that after passing me the second time, Munari went off the road with such brio that I never even saw him in the weeds.

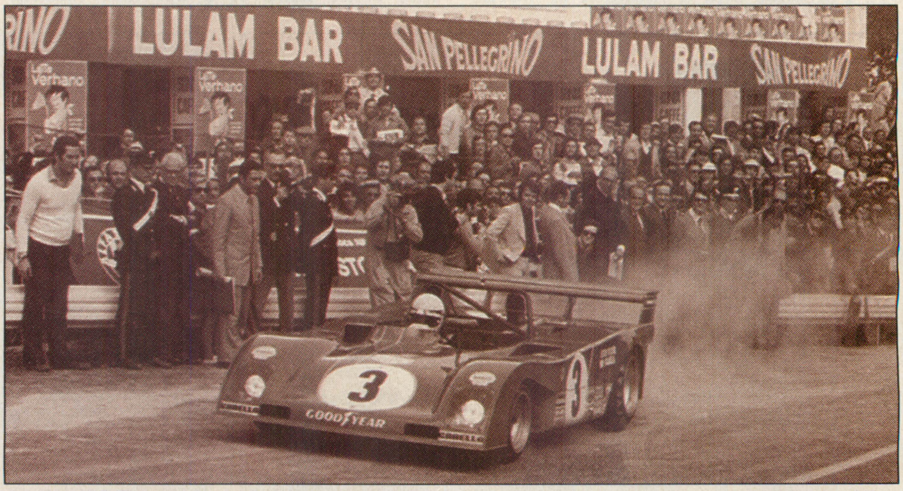
At the awards ceremony, we received a heart-warming ovation. I was gratified for Jean Claude to have done so well in his first race.

This was my last Targa Florio. I am happy now to look back on my six races and to know that I finished all six.

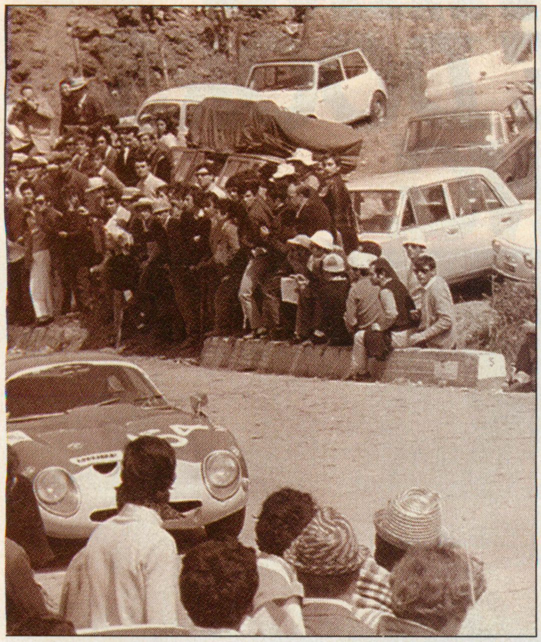
With hundreds of aficionados frighteningly close to the action, Ferrari battles Lancia in a classic GT category confrontation during the '70 event.

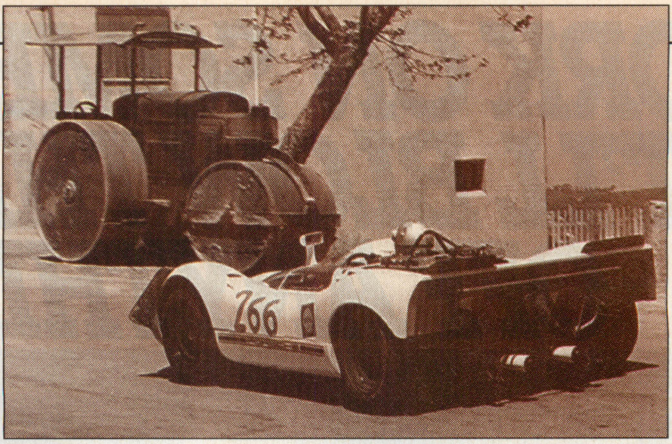


Jo Siffert and Brian Redman won the '70 Targa in one of Ferdinand Piëch's super-fast, super-light Porsche SS Spyders. Note the debris in the air intake.



In the '73 Targa, last of the great races, legendary local and two-time winner Nino Vaccarella led early in his Ferrari 312P before exiting with a broken gearbox and opening the door for a Porsche win by Herbert Muller and Gijs von Lennep.



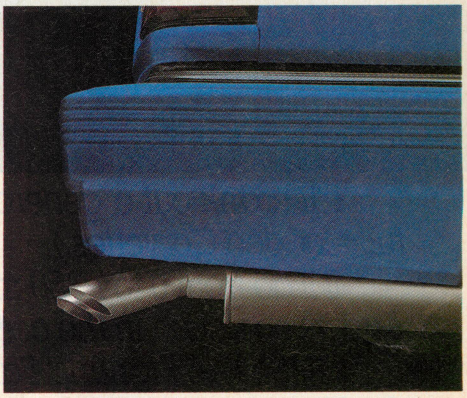


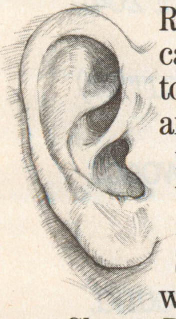
You never could tell what you might encounter on the Targa route, as the 1969 winning Porsche 908/02 of Gerhard Mitter and Udo Schutz found out.

Many long years after the end of the Targa Florio, I made a sentimental journey to the Tribuna de Cerda, where so many long-gone champions have left their marks. The weather was beautiful. The primavera Siciliana was in full bloom, and an overwhelming scent of oranges and flowers was everywhere. It was so peaceful, and I had the feeling of being in another faraway world. All the traditional sights were there and yet, I had the strange feeling of being on a deserted movie set, crumbling but with with living decor. Except for the broken windows and the fading colors, Vincenzo Florio's VIP suite was still standing across from the finish line. I couldn't help remembering those lavish luncheon parties given for his many guests and friends by the Sicilian nobleman. I remembered sitting there with him once, tasting his wine and jokingly asking, "How come there are no wild strawberries this year?" One of his guests, the impressive Conte de Sarzana, jumped up and called to a servant, "Please go get some little strawberries for *Il Signore Cahier*." Sarzana owned all the fields around Cerda. A little while later, a basket of strawberries was presented to me.

Never again was I without strawberries at the Targa Florio. That was a touch of class hard to imagine today. And it was somehow inseparable from the memories of those unforgettable racing champions who had left their imprints forever on 72 kilometers of what was once the most romantic and immortal road circuit in the world, and of Vincenzo Florio, the man who had made it all happen. MT

Now hear this.





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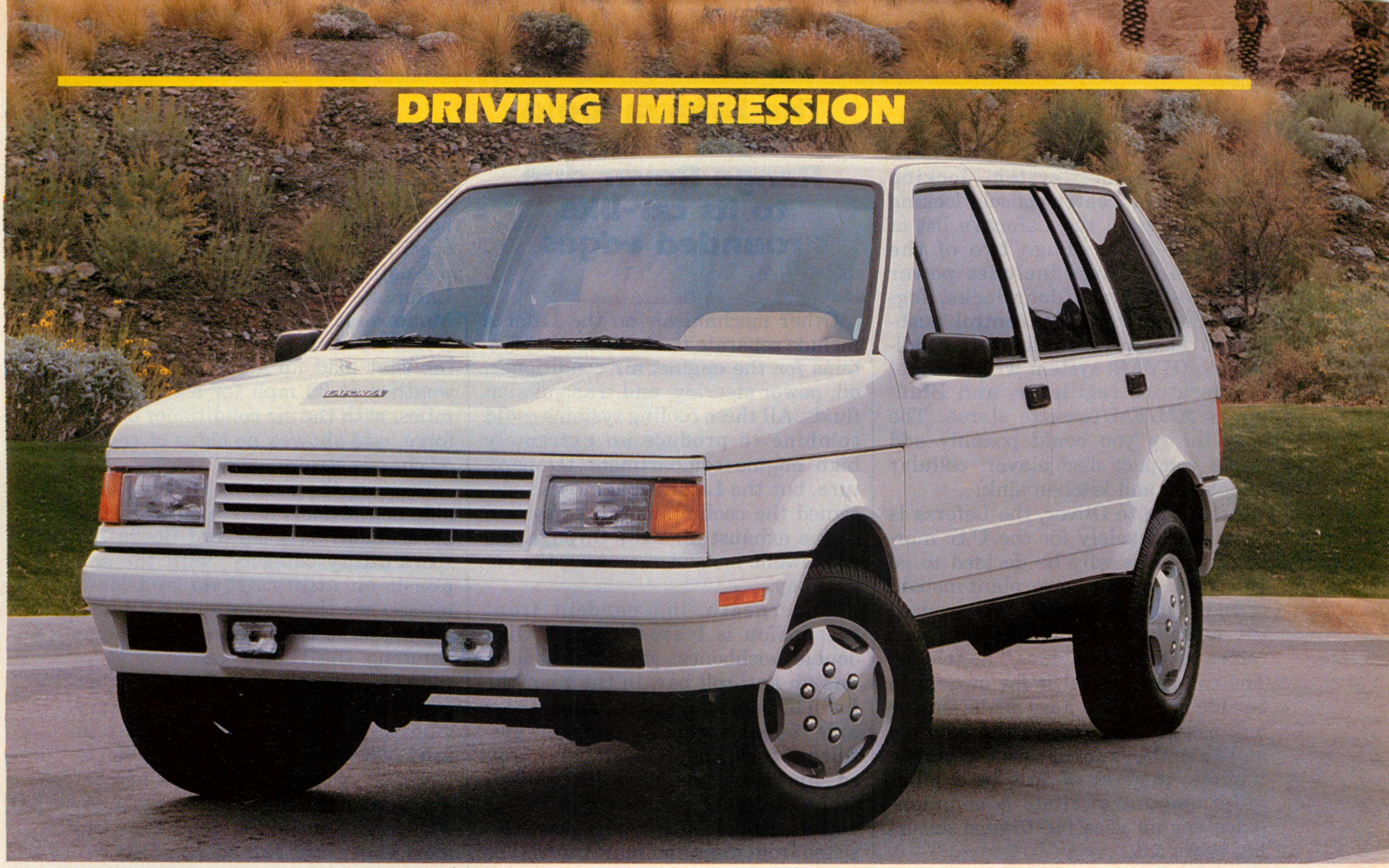


Laforza

Give me strength

by B.J. Hoffman

PHOTOGRAPHY BY MIKE BANKS, PETERSEN PHOTOGRAPHIC

Optimism is wonderful. It can move mountains, make rainy days sunny, and promise world peace. It can also foster false hopes, induce apathy, and promote blind faith. But optimism is necessary when starting a new automotive company, especially when you only offer one model.

The 4x4 Laforza (Italian for "the strength") is the first and only product from Laforza Automobiles, Inc., a Hayward, California-based corporation. The headliners of this show are Chairman and CEO Robert Oliver, President and Chief Operating Officer Joe Monterosso, and Senior VP of Service and Engineering Gene Stinson. Overseeing the manufacturing process in Italy is Dario Trucco, general manager of Automobili Industriali Italia S.p.A. (Auto Italia), a coachbuilder in Turin.

Using the '84 Rayton Fissori Magnum as a springboard, the Laforza's chassis, body, and interior are manufactured and assembled at the Auto Italia factory in Turin. It's then shipped to C&C Incorporated for installation of Ford's 185-hp 5-liter V-8. The engine, which is currently employed by Ford in its popular 2-door Bronco line, is supplied courtesy of Performance Products, a small division of Ford that deals with automotive entrepreneurs. The powerful V-8 is matched to Ford's 4-speed automatic overdrive transmission and linked to Chrysler's New Process 229 4-wheel-drive transfer case. At the touch of a button, the rear-drive Laforza can be shifted into 4wd. The wheel hubs are continuously engaged in 2- or 4wd mode.

Strength is obviously what the Laforza is aiming for, with a reinforced

"It's for people who set trends, not follow them"

boxladder frame and unicastle construction. Unicastle construction combines the A-pillar beams with the extruded rails along the top of the vehicle to create a stronger passenger compartment in case of rollovers.

Laforza's strong design comes courtesy of Tom Tjaarda, who also participated in the design of the Volkswagen GTI and new Alfa 164. Dimensions for the aerodynamic 4-door are a 106.2-in. wheelbase with an overall length of 179.9 in. and a height of 72.6 in. These specs make the Laforza a larger vehicle overall than the Range Rover, but it appears smaller because of its car-like rounded edges as opposed to the Rover's truck-like boxy shape. Air intakes and fog lamps are integrated into the front bumper, and the multi-window greenhouse provides good visibility.

The interior is comfortable for small and tall alike, with wide, thickly padded leather seats (the same hides used in Ferraris), plenty of headroom for 6-ft-plus back-seaters, and all the amenities we've come to expect from a car in this price range. More interior touches include burled walnut inserts in all four doors and along the dash, three-point belts for front and rear outboard passengers, and a rear seat that folds forward or can be removed to make a cavernous 84.2/98.6 cu ft of cargo space, enough to accommodate the biggest tailgate party.

Instrumentation consists of easy-to-read VDO speedometer, tachometer, volt, oil pressure, coolant temperature, and gas gauges. A thick-rimmed Momo steering wheel,

Code Alarm theft system, locking glovebox, and center console locking box are also on the Laforza's list of standard items. Page two of the standard features includes power windows/mirrors/door locks, foglights, moonroof, cruise control, pushbutton heater/ventilation/air conditioning (HVAC) system with manual temperature regulator, and Blaupunkt AM/FM/cassette stereo. The only things you could possibly add are a compact disc player, cellular telephone, and kitchen sink.

According to Oliver, the Laforza is "engineered solely for the U.S. market," which is why he decided to go with the domestic powerplant instead of one of import origins. "We wanted the dependability and reliability that comes with Ford engines," he told us. The company's goal is for owners to be able to go into a Ford dealership or any gas station around the country and have the Laforza serviced with a minimal amount of fuss in a minimum amount of time. A commonplace engine goes far toward ensuring that goal.

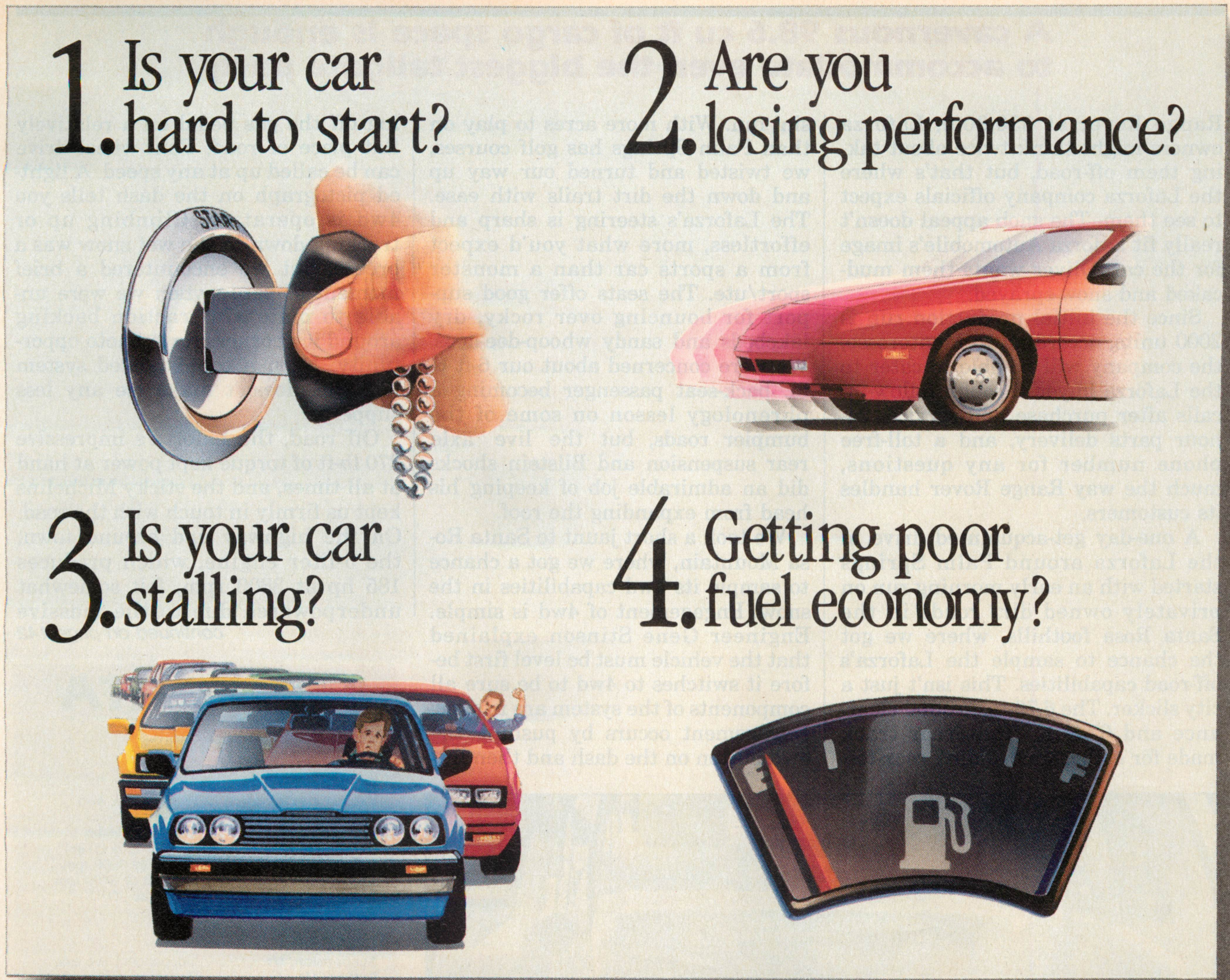
The Laforza looks smaller than the Range Rover due to its car-like rounded edges

Other mechanicals on the Laforza include separate fresh-air cooling systems for the engine, air conditioner, oil, power steering, and transmission fluids. All these cooling systems could combine to produce an extremely high engine compartment temperature, but the Laforza engineers redesigned the cooling air intake system so the exhaust air exits through the wheelwells instead of cooking the engine bay.

Underneath, independent front suspension is Iveco-designed, with double wishbones, gas-filled shocks, and an anti-roll bar. In the rear, the Laforza sports a full floating beam axle, 5-leaf spring suspension, gas-filled shocks, and anti-roll bar. Limited-slip viscous coupling differentials front and rear send torque to the wheels. Brakes are Bendix power-assisted front discs and rear drums. The Laforza rides on Michelin XCH4 225/75R16 tires mounted on special six-bolt Speedline-supplied alloy wheels specific to the Laforza.

Another strong selling point is the Laforza's 8000-lb towing capacity. Monterosso and Oliver claim it spent a half hour on Ford's test track pulling that load up a 7% grade in 80° weather at 30 mph for a total of 19 miles, with the air conditioner on full force, and showed no signs of engine or chassis strain.

Because the Laforza is only available as a 4-door, it's classified by the government as a car, but fits in the sport/utility category, with the emphasis on utility. Oliver and Monterosso see the car serving duty towing a boat to Lake Tahoe in July and climbing the snowy passes of Colorado in January, as well as doing an equally convincing job as a luxury ride to the poshest restaurant in town. The target audience for the Laforza is, according Oliver, "upscale innovators, the kind of people who set the trends, not follow them." As the most expensive 4wd sport/utility vehicle ($43,850, compared to the



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A cavernous 98.6 cu ft of cargo space is enough to accommodate even the biggest tailgate party

Range Rover at $36,800), Laforza owners might think twice about taking them off-road, but that's where the Laforza company officials expect to see them. The snob appeal doesn't really fit Laforza Automobile's image for the car. Oliver wants them mud-caked and snow-sprayed.

Since the initial production run is 2000 units, according to Monterosso, the company will be able to cater to the Laforza buyer through follow-up calls after purchase and service, 24-hour parts delivery, and a toll-free phone number for any questions, much the way Range Rover handles its customers.

A one-day get-acquainted drive in the Laforza around Palm Springs started with an early morning run on privately owned dirt roads in the Santa Rosa foothills, where we got the chance to sample the Laforza's off-road capabilities. This isn't just a city slicker. The 6.75-in. ground clearance and 67.8-in. front/rear track made for stable sand-slidin', rock-tossin' fun. With more acres to play on than Palm Springs has golf courses, we twisted and turned our way up and down the dirt trails with ease. The Laforza's steering is sharp and effortless, more what you'd expect from a sports car than a monster sport/ute. The seats offer good support for bouncing over rocky, dry lakebeds and sandy whoop-dee-doos. We were concerned about our 6-ft 6-in. back-seat passenger becoming a phrenology lesson on some of the bumpier roads, but the live axle rear suspension and Bilstein shocks did an admirable job of keeping his head from expanding the roof.

We took a short jaunt to Santa Rosa Mountain, where we got a chance to sample its 4wd capabilities in the snow. Engagement of 4wd is simple. Engineer Gene Stinson explained that the vehicle must be level first before it switches to 4wd to be sure all components of the system are in sync. Engagement occurs by pushing the 4wd button on the dash and then lifting off the gas pedal on a relatively flat piece of road. Four-wheel drive can be called up at any speed. A lighted pictograph on the dash tells you 4wd is operating. Climbing up or tracking down in the wet snow was a breeze, but we encountered a brief moment of panic when we were unable to maintain traction backing around icy corners for a photo opportunity. Even a sophisticated system like this doesn't make ice any less slippery.

Off road, the Laforza's impressive 270 lb-ft of torque kept power at hand at all times, and the sticky Michelins kept us firmly in touch with the road. On the highway and around town, the 5-liter engine, which produces 185 hp at 3800 rpm, felt somewhat underpowered due to the massive

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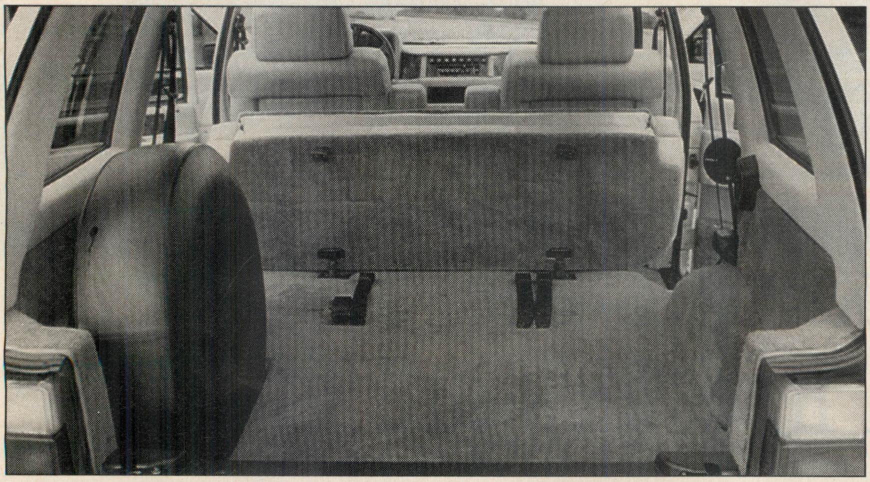


TECH DATA

Laforza

POWERTRAIN

Vehicle configuration	Front engine, 4wd
Engine configuration	V-8, OHV, 2 valves/cylinder
Displacement	4949 cc (302 cu in.)
Max. power (SAE net)	185 hp @ 3800 rpm
Max. torque (SAE net)	270 lb-ft @ 2400 rpm
Transmission	4-sp. auto., O/D
Final drive ratio	2.61:1

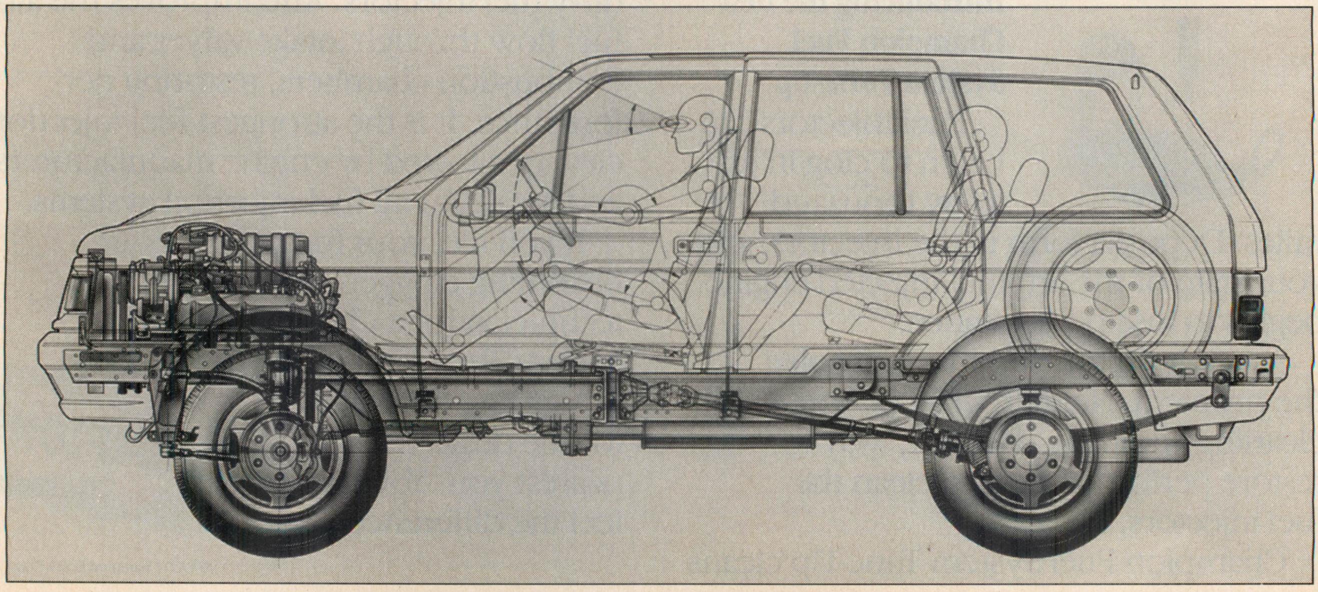
CHASSIS

Suspension, f/r	Independent/live axle
Brakes, f/r	Disc/drum, power assist
Steering	Rack and pinion, power assist
Wheels	16 x 7.0 in., alloy
Tires	P225/75R16 steel-belted radials

DIMENSIONS

Wheelbase	2697 mm (106.2 in.)
Overall length	4569 mm (179.9 in.)
Curb weight	2359 kg (5200 lb)
Fuel capacity	104 L (27.5 gal)

BASE PRICE	$43,850



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High-speed Russian roulette

24 Heures du Mans

by Phillip Bingham

PHOTOGRAPHY BY DAVID TAYLOR AND JOHN OVERTON

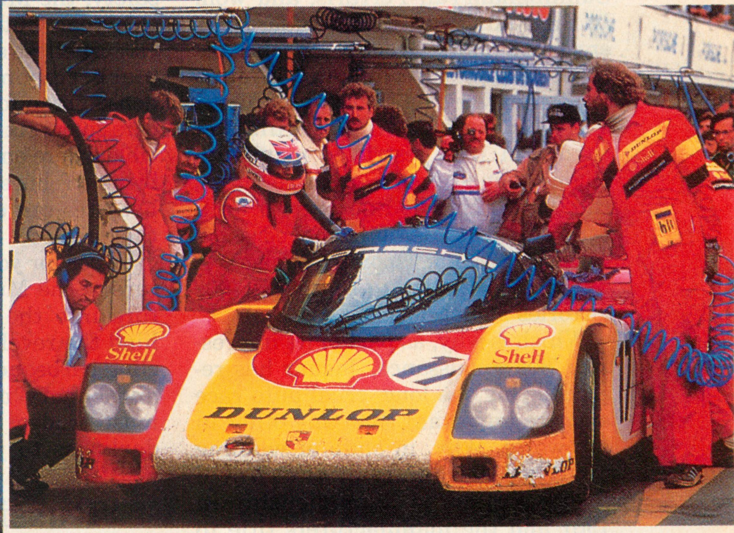
Despite all its previous tragedies, despite all its current dangers, Les Vingt-Quatre Heures du Mans will run this June 10/11 for the 58th time. Some say it's the world's most prestigious auto race, more important than the Indy 500 or any World Championship Grand Prix. Others condemn it as a callous corporate gamble, a way of inflating the reputations of a handful of auto makers at terrible human expense. Traditionally held in June, the month of sticky summer heat and lingering, luminescent evenings, LeMans unquestionably deserves its notoriety as auto racing's longest, hardest day. Countless millions have been spent in vain attempts to win there. Dozens of lives suddenly have ended there. Maybe six or seven car constructor's reputations, certainly no more, have been made there.

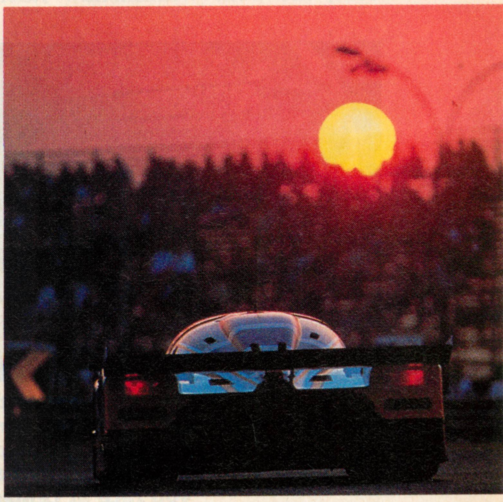
But whether they love the event or loathe it, few of the world's really serious sports car manufacturers can afford to stay away from LeMans for long. As Alfa Romeo, or Bentley, or Ferrari, or Ford, or Jaguar, or Porsche will tell you, LeMans is for its winners a fabulous generator of glamour and prestige, a marvelous source of marque-associations with superior speed and stamina. Ever since 1923, the worldwide publicity generated by this tree-lined track 140 miles southwest of Paris has compelled the best teams and drivers to take part.

Last year, it enticed entries from the factory-supported teams of Porsche, Jaguar, and Mercedes-Benz. The last time these three great marques confronted each other at LeMans could so easily have been the last time the race was ever run: It was June 11, 1955, the day of by far the worst tragedy seen at *La Sarthe*. It happened right in front of the bustling pitlane and main grandstand, when the Austin-Healey of Lance Macklin swerved suddenly to the left to make room for Mike Hawthorn's Jaguar D-Type. The fast-approaching Mercedes-Benz 300SLR of Pierre Levegh rode helplessly up the back of the Healey, cannoned into the crash barrier, killing its driver, broke in

Some say LeMans is the world's most prestigious auto race, more important than the Indy 500 or any World Championship Grand Prix

Each June, an international cast assembles at the Circuit de la Sarthe to participate in one of the world's most spectacular motorsport events. For more than a half century, men and marques have been made and broken during those 24 hours of high-speed combat.





half, and flew high into the crowd wrapped in flame. Eighty-three spectators lost their lives.

In Italy two years later, a much less severe mishap resulted in the Mille Miglia road race being outlawed. But LeMans, like the handful of auto makers and drivers it has rewarded, is against all odds a survivor.

They brought out the brooms on that horrible Saturday evening in 1955, they swept up the debris, they carted away the dead and injured, and—fearing that a mass exodus of 200,000 spectators would clog the routes of the scurrying ambulances—they pronounced the show must go on.

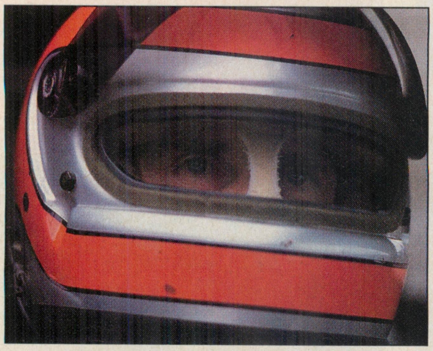
As a gesture of respect, as a symptom of shock, as a consequence of sheer nausea, the Mercedes board of directors in Stuttgart communicated at two o'clock in the morning that their team should withdraw from the

24 Heures du Mans

race—and, as it turned out, from auto racing altogether.

Solemn and subdued, the rival works Jaguar team nonetheless raced on, outlasted the works and Briggs Cunningham-run Ferraris, and won. In the summer of 1956, Jaguar drivers stood more proudly on the LeMans victory rostrum. And in June 1957, they were up there again. Until a Gallic (and galling) regulation change in 1958 restricted maximum engine displacement to three liters, the British cars had no peer. If for a couple decades Jaguar enjoyed a heroically dashing, sporting image, it was mostly thanks to those five '50s victories at LeMans.

Which is why, as part of its impressive '80s renaissance, Jaguar has regarded this one long, cruel auto race as more important than any other in the world. Why, in spite of winning eight of 10 rounds of the World Sports Prototype Championship in 1987 and the manufacturers title to boot, the Tom Walkinshaw Racing-run Jaguar team considered its results unsatisfactory. It *had* to win LeMans as well. And there was joyous celebration one summer's evening in 1988, when finally it did. But this year, Mercedes (which withdrew its entry from the '88 race following tire failures during qualifying) will also chase success at LeMans as if its entire reputation depends on it.



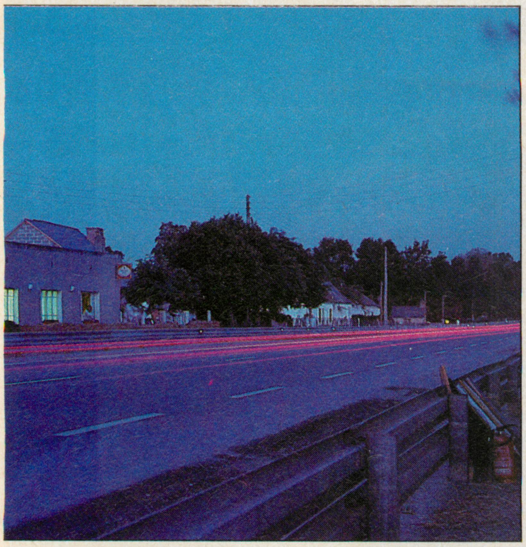
Veteran campaigner John Watson knows the harsh reality of the Sarthe circuit: "Sometimes, I think it's against your better judgement that you race at LeMans."

Based mostly on closed public roads, the circuit is 8.5 miles long. As Group C veteran and former Jaguar campaigner John Watson explains, "For nearly two thirds that distance, you're running at speeds approaching, or in excess of, 200 mph." Blurring past landmarks of such uncompromising solidity as houses and cafés and trees, the leading Group C cars consume all those miles in just 3 min/22 sec at an average speed of 150 mph. On the infamous Mulsanne Straight, a four-mile stretch with ruts cut by everyday traffic and a hazardous kink thrown in for good measure, the fastest cars can skip and dance precariously over the bumps at 240 mph. In the interest of safety, the Mulsanne was resurfaced this year, but it's still racing's longest, cruellest straightaway, a narrow black ribbon scything through a dense green forest, a place where the cars spend six of their 24 hours, a crucible where engines can scream to the brink of bursting, a furnace where hot tires can expand so dramatically they explode.

To see for yourself the awesome nature of the Mulsanne, you must venture into the night, must leave behind the reveling crowds and the sizzling barbeques and the bright lights and cheery music of the fun fair, must trudge through the dust and darkness to your parked car, and

"Russian roulette; that's what it is"

"Sometimes, I think it's against your better judgement that you race here."



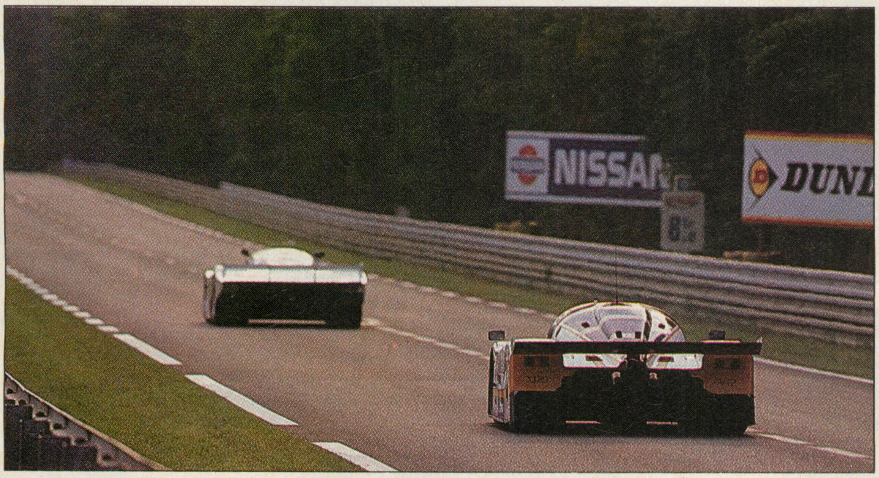
must negotiate miles of narrow country lanes passing through sleepy rural villages. At the back of the circuit, near the kink in its spine, you will find the Café des Hunaudières. Other buildings in the vicinity have their shutters closed tightly against the noise, but here the windows are thrown wide open, curtains dancing in the breeze, a warm and friendly light spilling out on the lawn. You can walk to the bar, collect a pilsner, carry it carefully to the other side of the room, pull up a chair to the table, lean curiously out a window, and recoiling in panic, slop your drink everywhere as a car howls past at 350 feet per second. The Mulsanne is less than two yards away.

These Group C sports prototype engines don't just scream, they throb and they hammer; they rattle the café's windows and shake its crockery; they throw out a terrific, violent sound that, caught between buildings either side of the straight, bounces around until finally it smacks you in the face. It's a noise you can *feel*, ascending through the floorboards and sending a little tingle up your spine. As John Watson matter-of-factly observes, "You're at such high speeds for so long at LeMans that you can quite easily forget how quickly you're going. But if you have an accident, at most places on the circuit, it's going to go on for an awful long time."

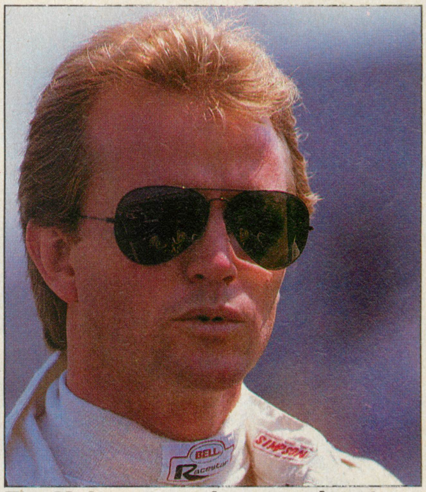
Midway down the legendary Mulsanne Straight stands the Café des Hunaudières, where Group C cars thunder past at 240 mph, just six feet from the spectators.

Evidence supported that remark as recently as 1987. Shortly after midnight, traveling at over 200 mph down the Mulsanne, a Jaguar XJR-8 had a tire let go and launched itself into a wild series of rolls. When the car had finished skating upside down along the crash barriers, when the horrible din of breaking glass and splintering fiberglass and tearing metal had subsided, when the tattered, twisted, steaming remnants of the vehicle had come to a rest scattered over several hundred yards, when the wide-eyed marshals had picked themselves up and run toward the wreck clutching their fire extinguishers, driver Win Percy unclipped his belts and stepped out unhurt. He *knew* he should be dead. It was several long, agonizing minutes before his team was told he was not.

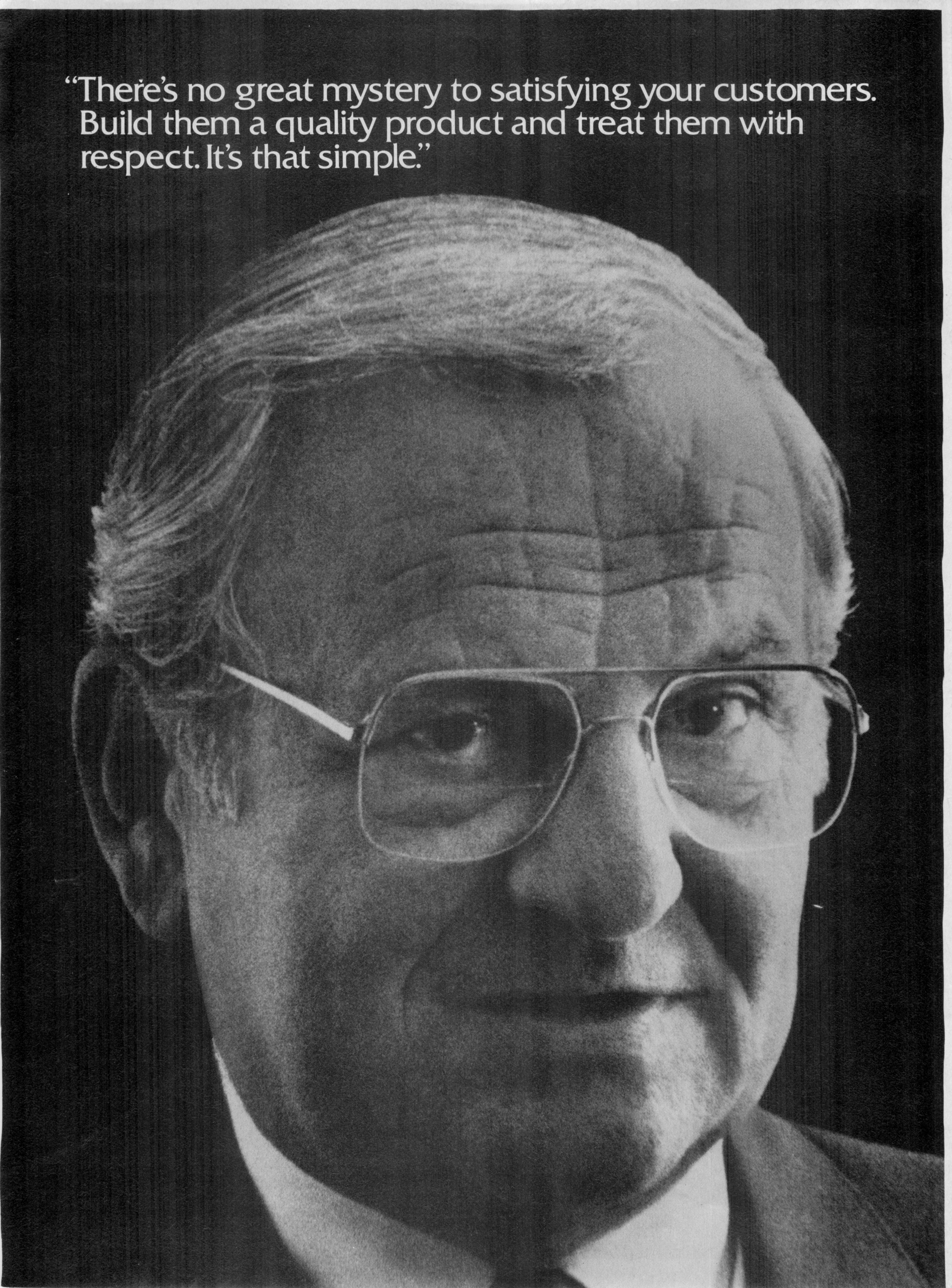
continued on page 144



The Mulsanne Straight is a narrow black ribbon scything through a dense green forest



The Mulsanne can have an almost hypnotic effect on drivers during the day. But for LeMans newcomer Kevin Cogan, the experience is quite different when darkness falls: "At night, my mind doesn't wander at all, because I'm scared to death!"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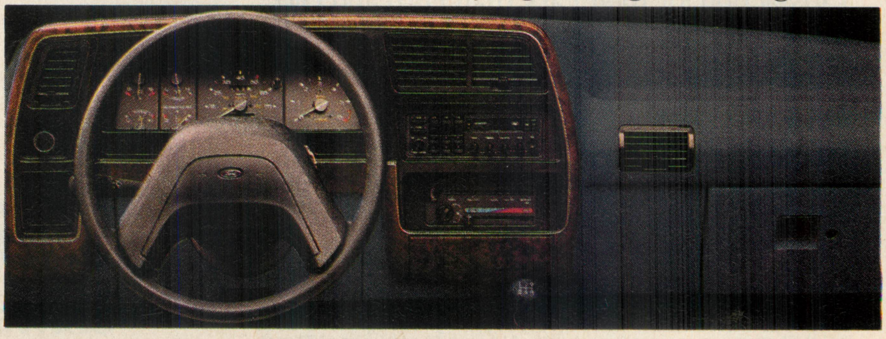

redesigned instrument panel with tachometer—Ranger XLT even outdoes itself. Column shift automatic transmission is available as an option. And returning features from last year include a fully synchronized 5-speed manual overdrive transmission, Twin I-Beam Front Suspension, and tinted glass. Competition aside, Ranger XLT is a lot of truck for the money.

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RANGER
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Clear-Coating

Buried in a column by Frank King in the Mercedes-Benz club magazine, *The Star*, is a note on Mercedes paint. King writes about Daimler-Benz clear-coating various solid colors on its new cars and remarks that "the clear-coating process can also be used to repair oxidized solid-color paint finishes that have not previously been clear-coated."

Why not? If the original paint is in good condition, just faded and oxidized, you—or any good bodyshop—can use rubbing compound on it and bring the color back. At that point, however, the color usually still has a thin, weak character. Clear-coating it—literally spraying a coat of clear acrylic over the color coat—enhances color saturation, adds a high-gloss finish, and protects the color coat from further oxidation. You can literally add years to the life of your paint job.

The next obvious step, of course, is clear-coating the solid color or metallic paint on your new car—if it isn't already clear-coated from the factory—in order to enhance and protect it. Just as you'd routinely undercoat and rustproof the chassis when you buy a new car, clear-coating is an inexpensive way to preserve the finish. Talk to your local bodyshop.

The Ultimate Flashlight

As I was dismantling my engine at night in the Bahamas Grand Prix paddock, a friend who was pitted nearby appeared with what he calls "The Ultimate Flashlight." He had taken a regular halogen driving light and mounted it to a battery terminal connector. This he mounted to one terminal of a top-terminal battery. A hot wire with an alligator clip went to the other terminal.

A couple of these things are enough to light up the pits at an endurance race, the whole underside of your car, or most of your driveway. Great idea.

Car Care Advice

Recently I changed my oil, but before doing so I used an engine flush, which I use about once a year. My father-in-law happened to be there and asked why I was using motor flush when for the same price I could buy four times as much kerosene that does a better job. What do you think?

Staff Sgt. Edfrid Ebenal
Fitchburg, Mass.

I think you're both overdoing it. If you change your engine oil regularly, every 3500 miles or so, there's no reason why you ever need to use engine flush. As for kerosene, forget it. Using kerosene in your engine is both destructive to your engine and extremely dangerous to you.

Think about it. You're no doubt draining the oil, replacing it with kerosene or motor flush, running the engine for a few minutes, then draining the kerosene/motor flush and refilling with fresh oil. But did you get all that kerosene out? Of course not, there's no way you could. There could easily be a pint of kerosene trapped in the oil passages, bearings, and heads. Even when you add fresh oil, that kerosene is still going to be there, now mixed with the oil. It will be forced into every critical area of the engine, effectively cutting down the lubricity of the oil, destroying its cooling properties, and drastically shortening the life of the engine.

Kerosene is essentially diesel fuel. As a liquid, it's relatively safe, but the vapors are explosive and heavier than air. What happens when you put kerosene in your oil system, then drain it out of the oil pan? Kerosene vapors flow out under your car and disperse close to the ground. All it takes is a hot drop light, spark from a wrench, cigarette ash, or even the igniter on your furnace clicking on to turn your car into a Flaming Fireball of Death. Kerosene belongs in lanterns, not in your car.

Detailing Books

Car cleaning has gotten so serious that, not only are there detailing "professionals" who'll clean your car for you, but, inevitably, books that tell you how to clean your car. *Ultimate Auto Detailing*, by David H. Jacobs, is an excellent step-by-step guide to taking a cosmetically neglected car and preparing it for a concours d'elegance. But if the idea of spending two or three weeks to clean your car seems excessive, this is not for you.

On the other hand, if you're the sort who switches his fender inner liners—one set for driving around, one set for concours—aligns all the bolt heads on the chassis and the staples hidden under the carpets, and *still* finds time to wax all the cotter pins in the suspension, then this is your guide. Jacobs' ultimate goal is to help you score a perfect 300 points in a Porsche Club concours—the toughest in the country—when a brand-new Porsche, fresh off the assembly line, only scores 150 points. Now that's detailing.

Corvette guru Michael Antonick talks only about the fiberglass wonders in his self-published *Secrets of Corvette Detailing*. But most of his step-by-step advice is applicable to any car. Like Jacobs, he recommends specific car care products and ways of doing things, but his discussions seem aimed at real people rather than the Super-Detailers of Jacobs' tome. Antonick still expects you to remove chrome emblems for waxing, for example, but his goal is the "factory correct" level of concours judging exemplified by the famous Bloomington Gold Corvette Show, rather than Jacobs' "twice as good as new" standard. That makes his advice more suitable for people who must actually drive their cars as well as clean them.

Then there's Henry Watts' self-published *Car Beautiful*. This little ring-bound 76-page pamphlet is by far the least assuming of these publications. There are no pictures; indeed, it looks to have been done on Watts' word processor. No matter. The man can write entertainingly, and he passes on good advice in a direct and straightforward manner.

He also tries to explain the philosophy of car care—why a clean car makes you feel spiffier, just as having polished shoes makes you feel spiffier—and approaches the whole process not as a concours contestant but as a car enthusiast trying to keep his street Porsche 911 clean. Like the others, he recommends specific car care products, but his idea of a complete car cleaning and waxing takes hours, not weeks. Besides, anybody who quotes from Robert Pirsig's *Zen and the Art of Motorcycle Maintenance* can't be all bad.

All three books are available from Classic Motorbooks, Box 1, Osceola, WI 54020, 800/826-6600. Jacobs' is $17.95; Antonick's goes for $14.95; Watts' is $7.95.

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ACTIVITIES	Varsity Soccer Intramural Softball
REFERENCES	Available Upon Request

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CAREER OBJECTIVE	An entry level position in an Electrical Engineering research or design firm.
EDUCATION	Bachelor of Science in Electrical Engineering, May 1987, Williamstown University; Justin, Oklahoma U.S. Army Signal Corps Officer Basic Course, September 1987
EXPERIENCE	**Training and Operations Officer,** U.S. Army Reserve Officers' Training Corps, Williamstown University Planned, organized, and executed training for battalion of 110 cadets. **Communications Platoon Leader,** Headquarters Troop, 1-17 Cavalry, 82nd Airborne Division, Fort Bragg, NC Responsible for the training, discipline and welfare of a forty-man platoon.
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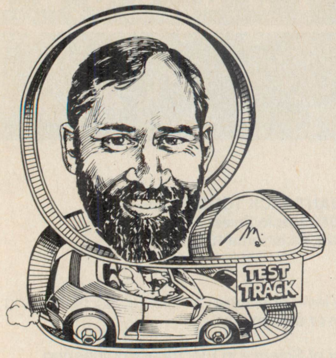


Please Leave Your Keys with the Person on the Right

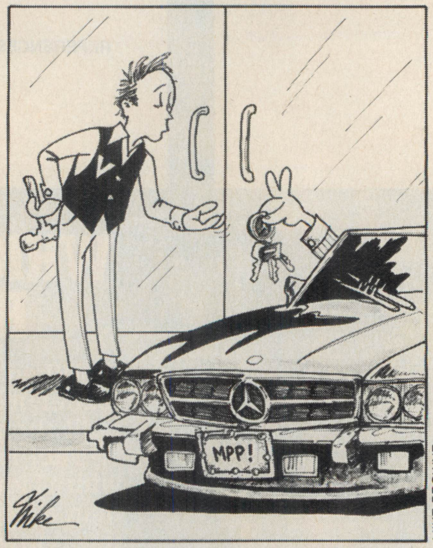
I suppose it was the National Traffic and Motor Vehicle Safety Act that started the trend, but over the past two decades, the word "recall" has become firmly ensconced in the American lexicon. Unfortunately, as it's currently defined, the concept only works one way: Manufacturers use recalls to correct their own miscues (either real ones or those imagined by people who consider wearing contact lenses in the shower as living dangerously). Sometimes they're initiated by the manufacturer, at others they're required by the government. In either case, they cover some defect of the vehicle, either in how it's designed or how it's built.

But recalls shouldn't present simply a one-way street. A manufacturer ought to have the ability of protecting its reputation, by recalling cars from those buyers who obviously show no appreciation for the car or the marque. Consider it sort of a "Manufacturers' Protection Plan," redeemable at any time during the car's life, against any owner. A way of saying, "We're sorry, but you don't deserve this car." Included in the deal would be either a cash buyout or a voucher for a more appropriate car.

The first such recall that comes to mind is any 3-series BMW that's been afflicted with rectangular headlights. Now certainly any company that can come up with something as Kalifornia Kit Kar as the Z1 can use some advice on styling. But that doesn't include another page torn from the same book. A set of Pep Boys quads does not a Giugiaro make. A George Barris, maybe. Or maybe even a Zagato, based on that company's latest abominations at the Geneva auto show. "Ah, yes, sir, you like headlights? If you'll just hand over your keys, we'll show you something in an early Datsun F10."

Not all the recall-triggering offenses should necessarily involve the automotive equivalent of a Michael Jackson nose job. Some can be more subtle. Foremost among these is the gold-colored trim on Mercedes, which seems to have reached epidemic proportions on the left coast. I have no doubt that the owners probably feel they've improved their cars' appearance and that gold is a perfectly appropriate treatment for a Mercedes. Further, they no doubt think this makes the car stand out from the rest, disregarding the fact that in L.A. they'll pass a half dozen others with the same gilt-ridden trim. "Sorry, sir, but you'll have to turn in your keys. Kindly drop them with the lady on the left, she'll give you a receipt redeemable for the Bill Blass Town Car of your choice."

Driving habits would certainly come under the jurisdiction of the Manufacturer's Protection Plan, and Mercedes should again have first



MIKE BROWNE

Recalls would cover everything from brake fade to brain fade

shot. Leading offender is the cotton-headed matron (of either sex) in the 560SEL, who zips along at a positively giddy 50 mph on the freeway. At that speed, the big M-B seems like a thoroughbred shackled to a plow. Further, it probably elicits comments about the stiff suspension and heavy steering. "Yes, ma'am, we've heard these complaints before. If I could just have your keys, we'll see if we can line up something in a Sedan de Ville."

While it's true that money and taste more often go foot in mouth than hand in hand, not all on the MPP's most-wanted list are in the big-buck bracket. Certainly, that's where a lot of the influence comes from. A perfect example is all the ersatz AMG bodywork that's sprouted, wart-like, from the flanks of everything from Acuras to Sentras. Here again, the "ground-effects" kits on 90-mph econoboxes represent backyard styling at its finest. "Please enclose your keys in the envelope provided. May we suggest an older Mazda Cosmo, perhaps? Or a late-'70s Trans Am? With a lift kit?"

Trucks should also fall under the same MPP jurisdiction, which, of course, places all those ridiculous Bigfoot replicas in immediate jeopardy. The twits with six shocks per wheel and earth-mover-class tires would be among the first to cough up their keys. "Yes, sir, park it over there by the loading dock so you can step out comfortably. The lady at the table has a check for you."

Not all MPP recalls need to be a wholesale confiscation. As with any current recall, some would just involve eliminating the offending part. For instance, the recent proliferation of econobox GTs and their requisite "driving lights" has provided drivers with yet another opportunity for candlepower abuse. Cutting through late-night freeway traffic with these driving lights blazing into your mirrors certainly qualifies as an MPP recallable offense. "If you'd just back into that parking space, sir. Yes, that's the one, next to the white-coated attendant holding the ball-peen hammer."

It's all really simple, and it provides several benefits in one fell swoop. Not only does it make sense to protect a manufacturer's reputation, but it also gets some of the more tasteless or outright offensive modifications off the street. This way, recalls would cover everything from brake fade to brain fade. So they'd actually accomplish something to benefit both the average driver and the manufacturer, which is more than you can say for the current system. MT

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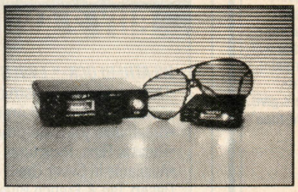

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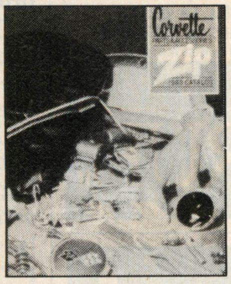

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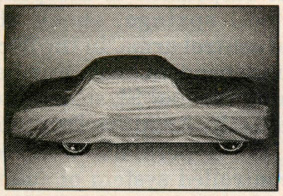

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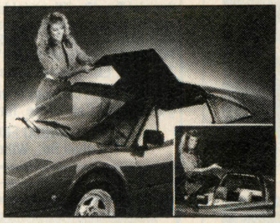

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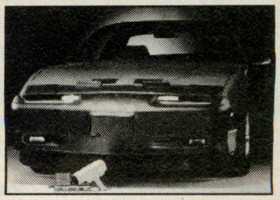

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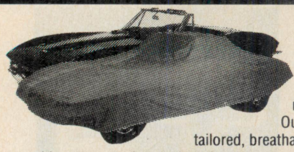

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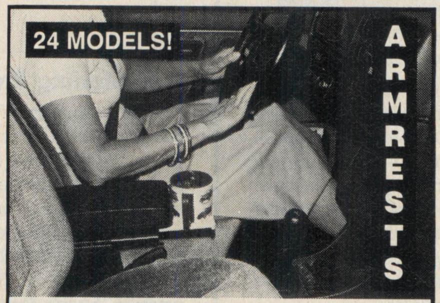

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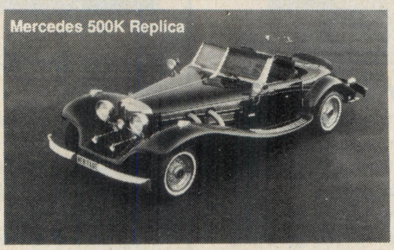

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300/500SL

continued from page 78

the separate electronic control modules (ECMs) of the injection and ignition systems. It permits the exchange of data between ECMs and also provides redundancy for most of the system's important sensors. One of the interesting benefits of the KE 5 is memory retention of vehicle altitude. At any altitude, the system apportions the correct fuel quantity according to the air density value stored in memory for smooth start-ups.

New to any Mercedes engine (and also incorporated in the 24-valve 3-liter engine design) is an electronically controlled inlet cam adjustment feature. This enables variable valve timing depending on the load or operating condition, Mercedes says, for better volumetric efficiency and higher torque. Virtually no overlap at idle supports smoother running and improved emissions control.

Only the last two SL versions are expected to be sold in this country. We suspect the decision is a canny one on Mercedes' part. The new SL will be a fresh spin on a Mercedes-as-hot-rod theme attempted with the high-performance 190-series sedans and perfected out-of-house by specialty Merc tuners such as AMG. Importing the 190-hp SL would serve to confuse that image.

A 5-speed manual transmission is planned as standard in the European 300SL and SL-24, with a 4-speed automatic gearbox available as an option. In part because of the high power output of the 5-liter 500SL, only the automatic is planned for it. In accordance with previous practice in this country, Mercedes may decide to offer only the automatic in both U. S. versions by the time the cars go on sale here.

The front suspension is independent, with coil springs, shock absorbers, and control arms. In the back is a 5-link independent rear. Further distinguishing the new SL suspension from the old is the Adaptive Damping System (ADS), a permanent microprocessor-controlled system of smart shocks and electronic sensors, softening or stiffening ride quality according to road inputs. Unlike a thematically similar system in the Ford Thunderbird Super Coupe, the Mercedes ADS offers no driver adjustment of ride control, a route Cadillac took with the Allanté. The four steps ADS offers are fully computer-controlled and automatic.

We were not permitted to drive the up-to-date Mercedes SL during the brief press visit. The journey was intended by Mercedes officials to be a symposium, a showcase for the devel-

oping nature of the SL's new systems. Despite America's obvious role in Mercedes SL sales successes, no U.S.-specification versions were available at our sneak-peak sessions. We sat in Euro-spec versions of the car.

We've often decried the price/performance ratio of such high-end luxury/sports cars; that is, the price asked bears little relationship to the performance offered. The new SLs from Mercedes-Benz will be expensive—$65,000 to $80,000 was one unofficial estimated range—but on paper, the performance side of the ledger has finally caught up to the price in full measure.

The Germans remain a little thin-skinned about Cadillac, though. A Mercedes spokesman bristled visibly when we asked where the U.S.-spec center high-mounted stoplight (CHMSL) would be placed, since the European cars we viewed had no such provision, just a generous three-pointed star on the decklid. One notes that's a perfectly logical place for the required third stoplight. Would Mercedes, we asked, follow Cadillac's lead and locate the CHMSL in the decklid badge?

For the American market, Mercedes will reduce the size of the decklid star and place a thin horizontal CHMSL above it, avoiding the tacked-on appearance of many poorly thought-out designs. But even suggesting Mercedes might copy *anything* from Cadillac caused the Mercedes man to stiffen reproachfully.

"Someone did suggest that at a meeting once," he said matter-of-factly. "He was killed immediately." MT

TECH DATA

Mercedes-Benz 500SL

POWERTRAIN

Vehicle configuration	Front engine, rear drive
Engine configuration	V-8, DOHC, 4 valves/cylinder
Displacement	4973 cc (303.5 cu in.)
Max. power (SAE net)	326 hp @ 5500 rpm
Max. torque (SAE net)	332 lb-ft @ 4000 rpm
Transmission	4-sp. auto.
Final drive ratio	3.29:1

CHASSIS

Suspension, f/r	Independent/independent
Brakes, f/r	Vented disc/disc, power assist, anti-lock
Steering	Rack and pinion, power assist
Wheels	16 x 8.0 in., steel
Tires	225/55ZR16 steel-belted radials

DIMENSIONS

Wheelbase	2515 mm (99.0 in.)
Overall length	4465 mm (175.8 in.)
Curb weight	1770 kg (3894 lb)
Fuel capacity	90 L (23.8 gal)
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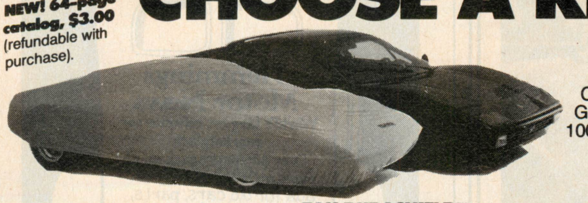

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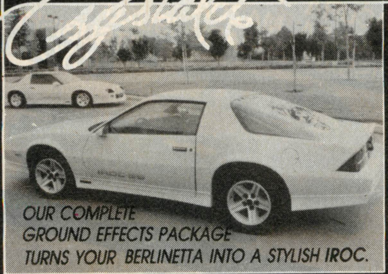

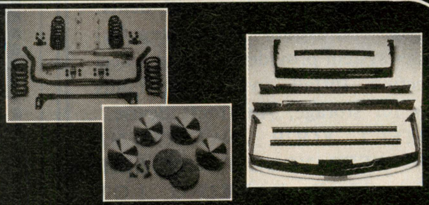

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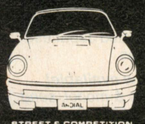

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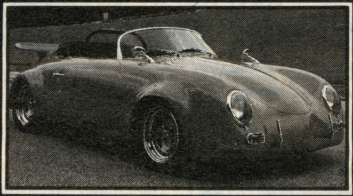

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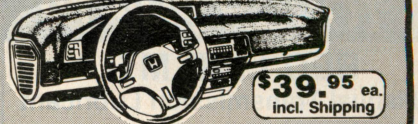

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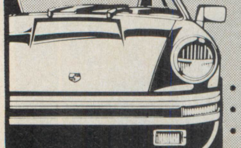

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PERFORMANCE MARKETPLACE

Laforza

continued from page 130

weight (over 5000 lb) of the vehicle, although this same engine in the 3300-lb Ford Bronco is well matched. We definitely would have liked a little more off-the-line performance.

We attacked the paved curves with as much vigor as the off-road turns. Once again, the car-like handling and minimal understeer made for confidence-inspiring driving. The power-assisted rack-and-pinion steering had just enough boost to keep the driver involved, with a good feeling of being one with the highway. Flipping U's on narrow streets is painless due to the Laforza's 30-ft turning radius, impressive for a vehicle of this size. Some impromptu braking tests showed them virtually fade free.

Our criticisms begin with the automatic transmission. We had trouble shifting into Drive and back into Park. It felt stiff and balky most of the time in our test model. There was another vehicle tested alongside ours, and when we tried the shifter in that one, it felt loose and sloppy. We were told these two vehicles were Nos. 10 and 11 off the production line. They had been taken apart and reconstructed a number of times by Laforza engineers and were still serving as guinea pigs to make the later models better. There were also some minor fit and finish problems in the metalwork in the tailgate that were explained away by their being development models. Finally we noticed gas fumes penetrating the cabin when the Laforza was topped off.

Although the Laforza handles more like a car than a sport/utility truck, comparisons to the Range Rover are inevitable. The audience the Laforza is going for should be different enough to keep the two companies off each other's toes. Its first customers will probably be Suburban owners, upper-income families tired of the big Chevy's 20-year-old design and engineering. Laforza plans to start up sales with 50 dealers nationwide. Of the 50, two will be Laforza only; the others will be joint sales with Mercedes, Jaguar, and Ford. Laforza also looks toward the future, with a possible upgraded Ford engine for its next model slated for 1991.

The forecast for the Laforza is optimistic. It's a solid vehicle that will be highly competitive with the best 4wd models offered this year. And at such a limited first run, the curiosity and exclusivity factors alone should find the 2000 units happy homes shortly after their introduction. For a new company with a bright future, we think that's good news. MT

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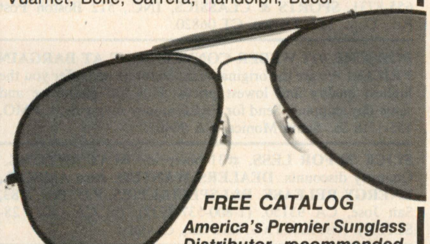

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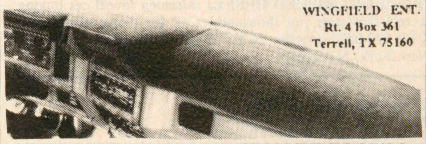

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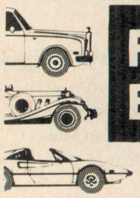

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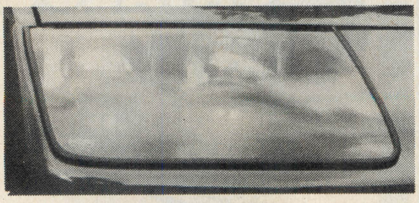

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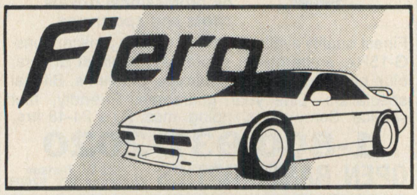

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24 Heures du Mans

continued from page 135

Jaguar didn't invite Win Percy back to LeMans the next year. Team boss Tom Walkinshaw said he couldn't tolerate his participation. It wasn't because Percy should be necessarily blamed for the accident; more that he and Walkinshaw are pals, and tough though Walkinshaw is, he couldn't bear another night like that one in June 1987, standing there in the gloom of the pits, listening in horror to the urgent messages on the team's radio, gathering fragmented but fightening details of "a big Jaguar shunt on the Mulsanne," and wondering . . . well, yes, wondering if he'd just lost a friend.

Instead, Win Percy drove a Group C Nissan last year, proving yet again that, despite all LeMans' risks, many drivers come back like incurable addicts for more.

But not all drivers have this compulsion. Jean-Louis Schlesser, French star of the Swiss-run Sauber-Mercedes team, chose to boycott the '88 race. Yes, he was one of only a handful of drivers with a realistic chance of winning the World Sports Prototype Championship, and, yes, LeMans seduces teams and drivers with triple world championship points. But, no, Schlesser would *not* go to LeMans. He'd rather jeopardize his world title, he said, than his life.

This is a view four-time LeMans winner and French national hero Henri Pescarolo cannot understand: "I think that if you are a driver for a team, and for that team one of the most important races is LeMans, you should go. If you do not," he states firmly, "you are not a racing driver. You must go farming or something else.

"In the past, you found many F1 drivers in LeMans, and they did not think it was too dangerous. The straight has been like that [long and fast] for about 80 years, so why change everything now? All the tracks now have chicanes everywhere because modern drivers think they are going too fast. LeMans is unique. It's an interesting aerodynamic problem."

Pescarolo's '88 LeMans driving partner, John Watson, doesn't entirely share this opinion. "Sometimes," says the Irishman, choosing his words carefully, "I think it's against your better judgement that you race at LeMans. The organizers are making ef-

forts to bring the circuit up to a level of safety that would be acceptable, say, for Grand Prix racing, but as far as I'm concerned, the sooner that happens, the better."

Indy Car campaigner Kevin Cogan, last year drafted onto the Jaguar team for a one-time outing at LeMans, revealed more: "Race drivers don't often worry about the risks of the sport, but if they do, it sure isn't when they're sitting in a race car. But LeMans is a bit unusual. Coming from Indy cars, the outright speed on the straightaway doesn't feel like anything special. But it goes on *forever*. Once you're on the straight, you

"Race drivers don't often worry about the risks of the sport, but if they do, it sure isn't when they're sitting in a race car"

accelerate to top speed, you realize you're going pretty damn quickly, you look at all your gauges to check that everything's running okay—and then, when all that's done, you still have another two miles to go! That's strange because it gives you a lot of time to think about things you don't really need to think about."

Cogan pauses and laughs, "At night, though, it's the opposite. My mind doesn't wander at all because I'm scared to death!"

Another respected driver willing to confess fear is West Germany's Klaus Ludwig. A 40-year-old veteran, Ludwig was once talented and hungry enough to make it in Grand Prix racing, but without the career breaks in his youth or the inclination to drive a back-of-the-grid single-seater in his later years, he's concentrated instead on becoming one of the best sports car racers in the world. He's won LeMans three times. And yet he detests the place.

We were at dinner with Ludwig one evening in 1986 when an F1 driver raised the subject of LeMans. Ludwig clucked his tongue in disapproval, bunched together the fingers of his right hand in the shape of a gun, and pointed them at his own head. "Russian roulette," he said. "That's what it is."

True to his words of that evening, Ludwig resolutely stayed away from LeMans in 1987. But the following year, with a philosophical shrug and a self-deprecating laugh and a throwaway line about "duty," he was back. Even with three LeMans victories already to his credit, he couldn't miss the most important race in the world. MT

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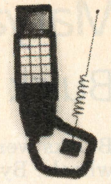

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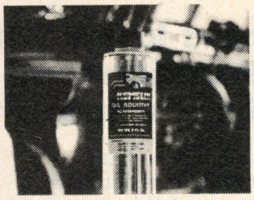

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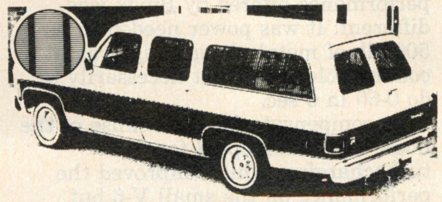

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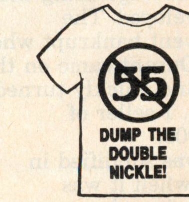

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Buick on the (American) Road Back

I've always had a special place in my heart for Buicks. More years ago than I would care to admit, my favorite uncle took my sister and me to the Buick dealer to pick up his new Roadmaster. We were absolutely thrilled. Those were the days when buying a Buick made a statement: The owner had "arrived." Even as children, we understood the pecking order among makes that put Buick above our Plymouth. Buick owners knew who they were, and Buick understood their tastes and translated them into sheetmetal. The cars were unique, big, and stately. There was nothing else like them on the road.

This might sound like an aging baby boomer telling stories about the good old days, but the sad fact is that Buick isn't what it used to be. The brand that once had no competition is struggling to find an identity for itself amid General Motors' profusion of lookalike cars and its own missteps into high performance and electronic gadgetry.

Without Buick, there may never have been a General Motors Corporation. The Buick Motor Company was the first auto concern acquired by William C. Durant, the brilliant but undisciplined genius who built GM. In 1903, a plumber/inventor named David Buick was trying to build a horseless carriage using the engine he had developed. The company nearly went bankrupt when the irrepressible Durant came on the scene, bought it, and quickly turned Buick into the No. 1 seller of automobiles by 1908.

Buick's image was solidified in postwar America when it was associated with engineering innovations like the Dynaflow automatic transmission and V-8-engined models with top speeds over 100 mph while most cars struggled to reach 80 mph. The division was also something of a styling leader. The '49 2-door Buick Riviera started the hardtop trend. That was also the year portholes appeared, with four on each side of the Roadmaster and three on each side of the less-expensive models. For many years, these nonfunctioning holes were Buick's trademark. Buick and Cadillac became the first cars to have wraparound windshields, both made heavy use of chrome trim, and Buicks were equipped with real wire wheels. By 1955, Buick was the third best-selling brand in the country after Chevrolet and Ford. More than 750,000 Americans were sold on Buick's soft ride, powerful engines, and identifiable styling that year.

It may have been the peak year for Buick even though sales actually were higher in the '80s. After 1955, other GM divisions began to invade Buick's turf by making their own models bigger and faster. Even Chevrolet offered more powerful V-8s and flashier styling. In those days, Buick's greatest challenge came from its sister division at GM, not from Ford or Chrysler.

A crushing blow was dealt to Buick's image after the energy crisis in 1973, and Buick sales plunged by 50% in 1974. Big, heavy Buicks were the epitome of the phrase gas-guzzler. The era of the small car had arrived, and Buick dealers demanded that they, too, have a small car even though it was the antithesis of what Buick stood for. The Skyhawk, a car derived from the Chevrolet Vega and 20 in. shorter than any other Buick, became the first subcompact Buick.

Buick owners knew who they were, and Buick understood their tastes and translated them into sheetmetal

With the Skyhawk came badge engineering: Every GM division except Cadillac had a version of this car to sell. During the '80s, Buick would lose styling individuality by having to share the J, X, C, K, E, and A platforms with at least two other GM divisions. Side by side, Buicks became indistinguishable from Chevrolets or Oldsmobiles. It hardly mattered to the public that the automatic seat in the Buick might have 20 possible adjustments whereas the seats in the Oldsmobile would have a maximum of 12 adjustments, if the cars looked alike.

Buick further confused its customers with its mid-'70s shift in emphasis toward hot-rod-type performance and electronic gadgetry. Pontiac had always been GM's performance division with cars like the GTO and the Firebird. The kind of performance offered by Buick was different: It was power needed to haul 5000 lb of metal along a highway at a comfortable speed, not necessarily to do 0-60 in 6 sec.

To compensate for the demise of the huge V-8, Buick opted for turbocharging, which improved the performance on the small V-6 but brought with it mechanical problems. With the second energy crisis came the brief fling with the diesel engine. Along with the turbos were the sedans with sluggish diesels that couldn't last more than 40,000 miles without problems. Thousands of Buick customers were turned off forever by the ill-fated attempt to market diesels.

Buick went on the racing circuit in the '80s with the powerful Regal Grand National. The IMSA and NASCAR racing influence could be seen in Buicks of the day with their multi-port fuel injection, airdams, spoilers, touring suspensions—all fine, except not consistent with the Buick heritage. It represented an attempt by Buick to win younger customers, but all it did was confuse everyone. Buicks were filled with electronic gadgets like the much maligned Graphic Control Center, a cathode-ray tube that nearly requires a short course in programming to turn on the radio. It was installed in the shrunken Buick Riviera of 1986, which was a sales disaster. By 1988, Buick sales fell to 581,424, compared to 941,611 in 1984.

Obviously, the people making decisions that governed the cars Buick would sell in the '80s had forgotten who bought Buicks and why they bought them. Although the two energy crises are blamed for many of the products sold today by Buick, the reality is that Buick lost its way when its designs were identical to competing GM brands and innovation meant gadgetry.

Buick is now trying to go back to its roots and once again offer cars that reflect a traditional luxury orientation. The division wants to sell a premium American road car second in price only to Cadillac. For 1989, the word Dynaride has appeared in the sales literature. Sounds suspiciously like Dynaflow, doesn't it? Buick is about to carry the nostalgia bit one step further with the reappearance of the Roadmaster name in a couple years. GM hasn't yet found a way to incorporate portholes in contemporary design, but the upcoming Roadmaster will restore product differentiation for the brand. It's a big car that looks like no other model in the GM design studio. It won't be mistaken for an Olds or a Chevy.

Over the last 25 years, the auto world has changed; it would be naive to suggest that Buick can ever be restored to the market position it once commanded. There's too much competition in that sector from American, European, and Japanese auto companies for that to happen. But at least Buick is showing signs of reviving. It can succeed only if the cars it introduces during the next five years are really different from other GM models. MT

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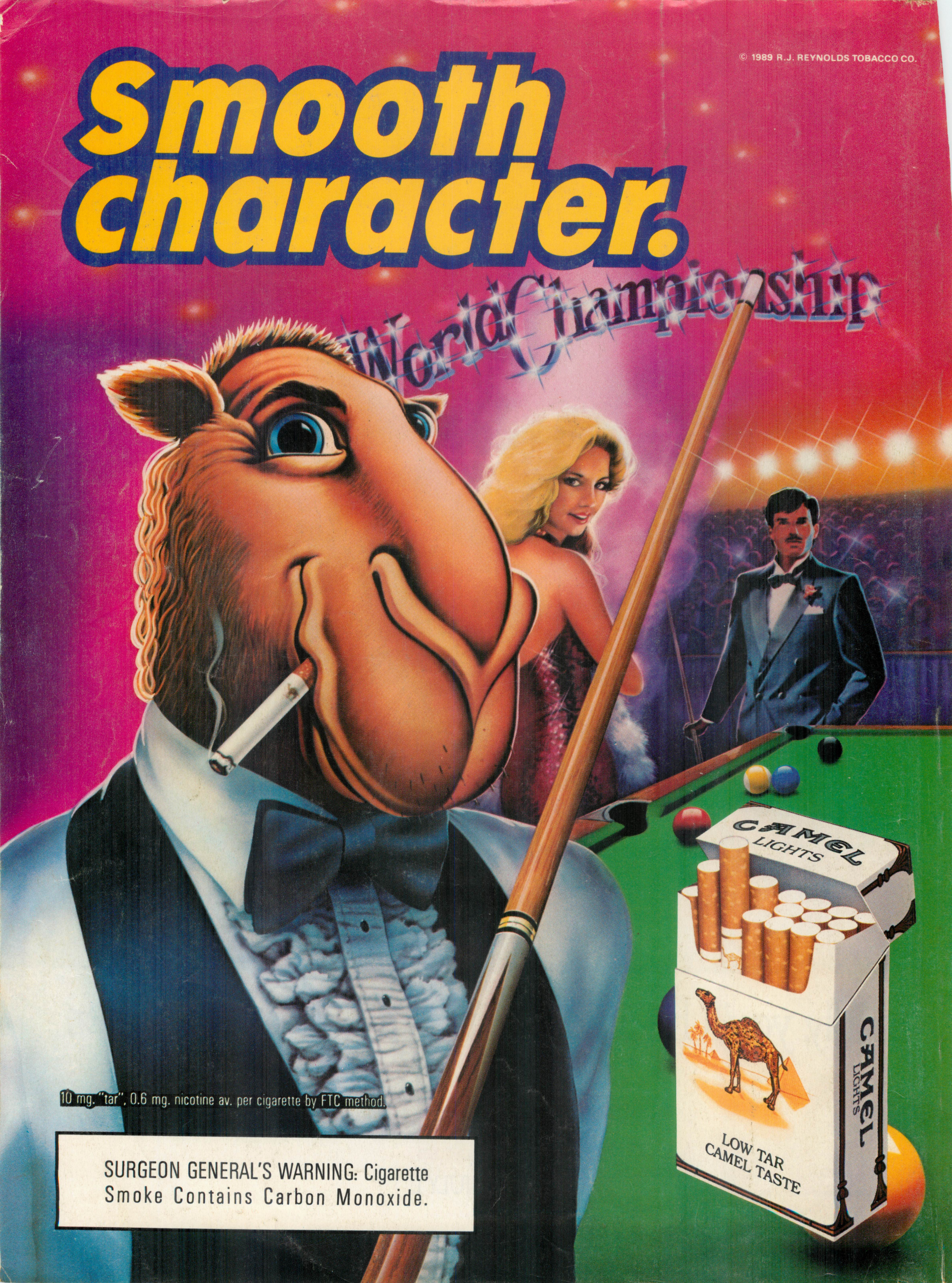
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